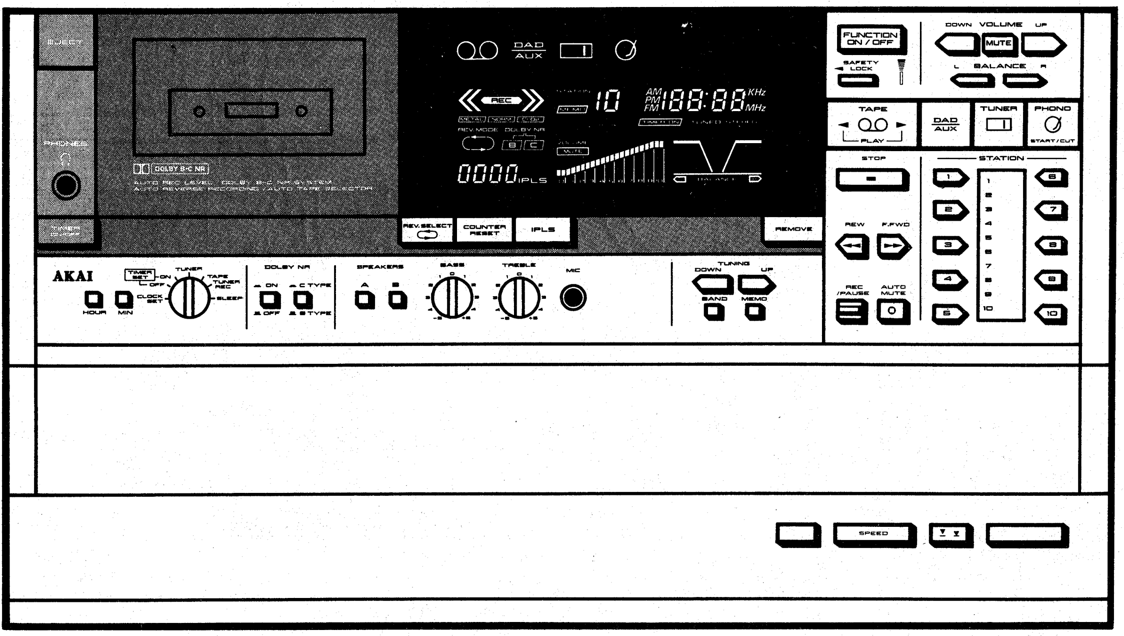
F-7/L
(FD-7/L)
(FP-7)

AKAI SERVICE MANUAL


EJECT
PHONES
TIMER
DOLBY B-C NR
AUTO REC LEVEL DOLBY B-C NR SYSTEM
AUTO REVERSE RECORDING / AUTO TAPE SELECTOR
DAD
AUX
REC
REV.MODE
DOLBY NR
0000 IPLS
AM
PM
FM
188:88
KHz
MHz
10
REV.SELECT
COUNTER RESET
IPLS
REMOVE
FUNCTION ON / OFF
SAFETY LOCK
DOWN
VOLUME
UP
MUTE
L
BALANCE
R
TAPE
PLAY
TUNER
PHONO
START/CUT
STOP
STATION
REW
F.FWD
REC /PAUSE
AUTO MUTE
AKAI
TIMER SET
ON
OFF
CLOCK SET
HOUR
MIN
TUNER
TAPE
TUNER REC
SLEEP
DOLBY NR
ON
C TYPE
OFF
B TYPE
SPEAKERS
A
B
BASS
TREBLE
MIC
TUNING
DOWN
UP
BAND
MEMO
1
2
3
4
5
6
7
8
9
10
SPEED

Hi-Fi COMPOSITE SYSTEM

MODEL F-7/L (FD-7/L, FP-7)

This manual is also applicable to the turntable Model FP-7 in the composite system F-5/L.

ABBREVIATIONS FOR SERVICE MANUAL MODEL F-7/L (FD-7/L, FP-7)

ABBREVIATION	EXPLANATION
AF	Audio Frequency
AM	Arm Motor
AR	Anti Recording
CM	Cam Motor
DAD	Digital Audio Disc
EQ	EQualizer
F	Filament
FLD	FLuorescent Display
"H", H	High (referring to voltage)
INH	INHibit
INT	INTerrupt
IPLS	Instant Programme Locating System
"L", L	Low (referring to voltage)
MIN	MINute
MM	Main Motor
NC	No Connection
NP	No Pins
O/C	Open/Close
PLL	Phase Locked Loop
S/C	Start/Cut
SCK	Serial ClocK
SEG	SEGment
SENS	SENSitivity
SI	Serial Input
SO	Serial Output
SW	SWitch

AKAI
10
12:00
0000
BALANCE

Hi-Fi COMPOSITE SYSTEM

MODEL F-7/L (FD-7/L, FP-7)

SECTION 1 MODEL FD-7/L SERVICE MANUAL 3
SECTION 2 MODEL FP-7 SERVICE MANUAL 27
SECTION 3 PARTS LIST 41
SECTION 4 SCHEMATIC DIAGRAM 61

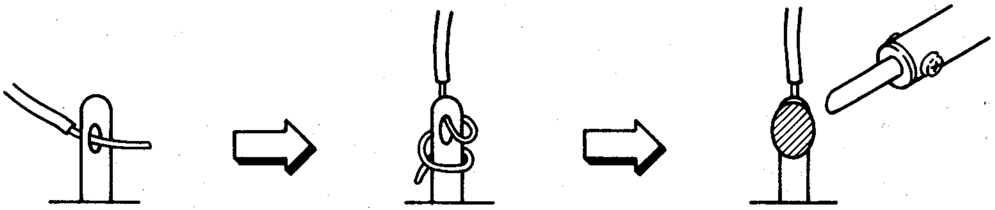
SAFETY INSTRUCTIONS

SAFETY CHECK AFTER SERVICING

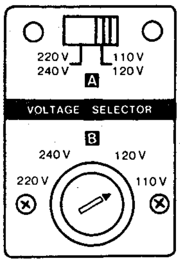
Confirm the specified insulation resistance between power cord plug prongs and externally exposed parts of the set is greater than 10 Mohms, but for equipment with external antenna terminals (tuner, receiver, etc.) and is intended for $\boxed{C}$ or $\boxed{A}$, specified insulation resistance should be more than 2.2 Mohms (ground terminals, microphone jacks, headphone jacks. line-in-out jacks etc.)

PRECAUTIONS DURING SERVICING

1. Parts identified by the ⚠ symbol parts are critical for safety.
   Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with specified replacements.
   Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (Insulating Barriers)
   4) Insulation sheets for transistors
   5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.
10. Voltage conversion (FD-7/L)
    Models for Canada, USA, Europe, UK and Australia are not equipped with this facility. Each machine is preset at the factory according to destination, but some machine can be set to 110V, 120V, 220V or 240V. If your machine's voltage can be converted:
    1) Disconnect the power cord.
    2) Move the VOLTAGE SELECTOR A and B located on the rear panel with a screwdriver until the correct voltage is indicated.



EJECT
AKAI
10
12:00
0000

SECTION 1

SERVICE MANUAL

MODEL FD-7/L

TABLE OF CONTENTS

- I. SPECIFICATIONS 4
- II. DISMANTLING OF UNIT 5
- III. CONTROLS 6
- IV. PRINCIPAL PARTS LOCATION 8
- V. MECHANICAL ADJUSTMENT 9
  - 5-1 PINCH ROLLER PRESSURE MEASUREMENT 9
  - 5-2 WINDING TORQUE MEASUREMENT IN EACH MODE 9
  - 5-3 TAPE SPEED ADJUSTMENT 9
- VI. HEAD ADJUSTMENT 10
  - 6-1 TAPE GUIDE ADJUSTMENT 11
  - 6-2 REC/PB HEAD AZIMUTH ADJUSTMENT 11
  - 6-3 HEAD HEIGHT ADJUSTMENT 11
  - 6-4 HEAD BLOCK PROJECTION ADJUSTMENT 11
- VII. ELECTRICAL ADJUSTMENT 12
  - 7-1 SYSTEM CONTROL P.C BOARD ADJUSTMENT 12
  - 7-2 PRE-AMP P.C BOARD ADJUSTMENT 13
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  - 9-2 COMPOSITION OF VARIOUS P.C BOARDS 16

For basic adjustments, measuring methods, and operating principles, refer to GENERAL TECHNICAL MANUAL.

I. SPECIFICATIONS

AMPLIFIER SECTION

RATED POWER OUTPUT (2 channel driven)	45 W per channel, minimum RMS, at 8 ohms from 20 to 20,000 Hz with no more than 0.01% total harmonics distortion 50 W into 8 ohms at 1 kHz, with no more than 0.01% total harmonic distortion
MUSIC POWER	121 W per channel, at 8 ohms
INPUT SENSITIVITY	Phono: 2.5 mV/47 kohms AUX: 230 mV/47 kohms
OUTPUT	REC OUT: 150 mV SPEAKERS A or B 6Ω ~ 16Ω, A + B 12Ω ~ 16Ω

TUNER SECTION

		L model
FREQUENCY RANGES	FM87.4 to 108.1 MHz AM 522 to 1,611 kHz (9k step) or 630 to 1,610 kHz (10k step)	FM 87.4 to 108.1 MHz MW522 to 1,611 kHz LW 146 to 353 kHz
USABLE SENSITIVITY	FM (IHF) 11.2 dBf AM 300 μV/m	FM (IHF) 11.2 dBf MW 300 μV/m LW 300 μV/m
SIGNAL TO NOISE RATIO	FM 75 dB (MONO)/65 dB (STEREO) AM 40 dB	FM 75 dB (MONO)/65 dB (STEREO) MW 40 dB LW 35 dB
STEREO SEPARATION	FM (1 kHz) 45 dB	FM (1 kHz) 45 dB
ANTENNAS	FM: EXT. ANT 75 ohms unbalanced AM: (MW/LW) Loop ANT.	

CASSETTE DECK SECTION

TRACK SYSTEM	4 track 2 channel stereo
MOTORS	Electronically speed controlled DC motor (CAPSTAN) x 1, DC MOTOR (CAM) x 1
FREQUENCY RESPONSE	Metal 30 to 17,000 Hz ±3 dB Chrome 30 to 16,000 Hz ±3 dB Normal 30 to 15,000 Hz ±3 dB
SIGNAL TO NOISE RATIO	56 dB Dolby C type NR ON: Improves up to 15 dB at 500 Hz, 20 dB at 1 kHz to 10 kHz Dolby B type NR ON: Improves up to 5 dB at 1 kHz, 10 dB above 5 kHz
WOW AND FLUTTER	0.05% (WRMS), 0.09% (DIN 45500)
DISTORTION	0.8%
MIC INPUT	1.5 mV

HI-FI COMPOSITE SYSTEM F-7/L

POWER REQUIREMENTS	120 V 60 Hz for U.S.A. and Canada 220 V 50 Hz for European countries except U.K. 240 V 50 Hz for U.K. and Australia 110/120/220/240 V switchable, 50/60 Hz for other countries
DIMENSIONS (FD-7/L+FP-7)	440(W) x 250(H) x 320(D) mm (17.3 x 9.8 x 12.6 inches)
WEIGHT (FD-7/L+FP-7)	18.6 kg (41 lbs)
AMP-TUNER-DECK (FD-7/L) DIMENSIONS WEIGHT	 440(W) x 150(H) x 320(D) mm (17.3 x 5.9 x 12.6 inches) 10.6 kg (23.4 lbs)

WIRELESS REMOTE CONTROL (TRANSMITTER)

SYSTEM	Infrared Ray, PCM System
AREA OF OPERATION	7 m (on axis)
DIRECTIVITY	60° (at 4 m)
OPERATION TIME	10,000 times
POWER REQUIREMENT	DC 3V (R6 or AA size dry battery x 2)
DIMENSIONS	100 x 25 x 131 mm
WEIGHT	150 g (without batteries)

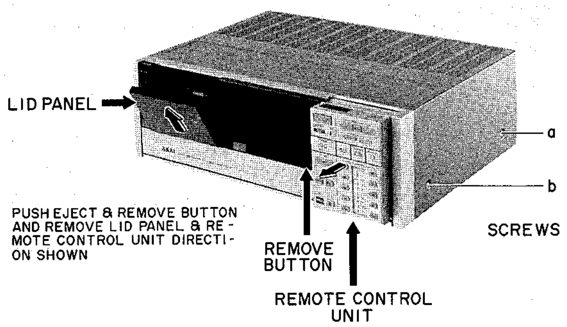
*** For improvement purposes, specifications and design are subject to change without notice.**

*** Noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.**
"Dolby" and the double-D symbol are trade marks of Dolby Laboratories Licensing Corporation.

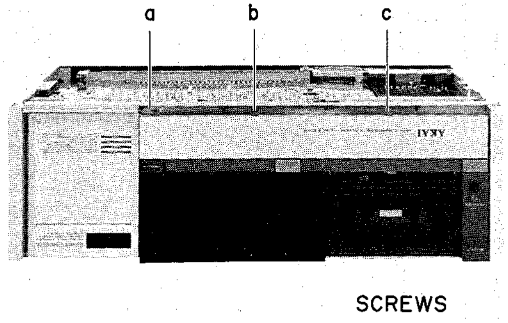
II. DISMANTLING OF UNIT

In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the photographs. Reassemble in reverse order.

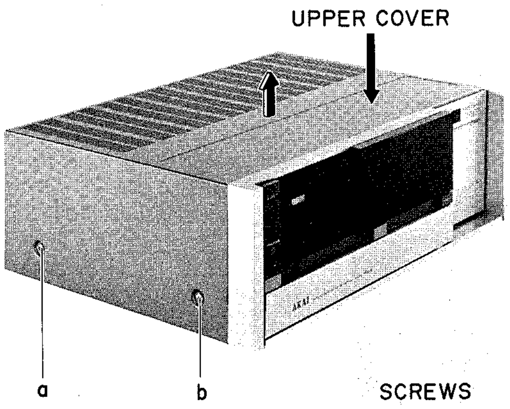
1


LID PANEL
a
b
PUSH EJECT & REMOVE BUTTON AND REMOVE LID PANEL & REMOTE CONTROL UNIT DIRECTION SHOWN
REMOVE BUTTON
SCREWS
REMOTE CONTROL UNIT

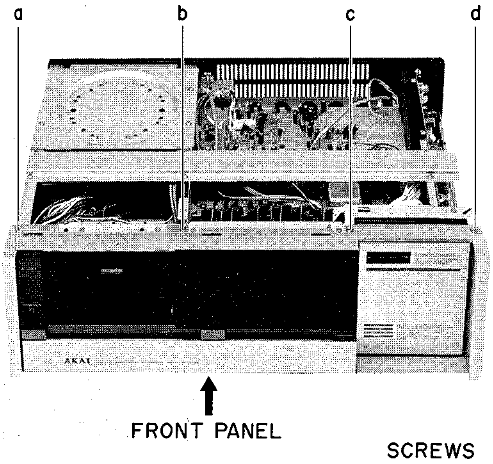
4



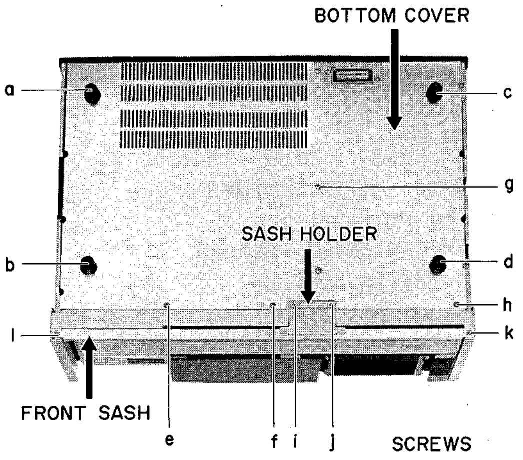
2


UPPER COVER
a
b
SCREWS

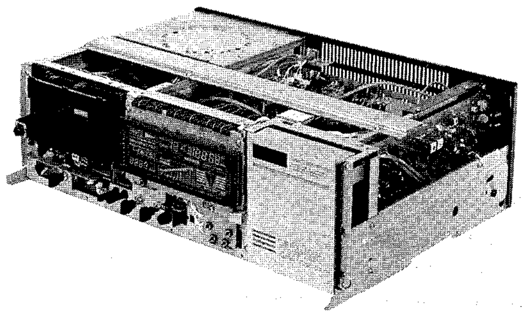
5


a
b
c
d
FRONT PANEL
SCREWS

3


BOTTOM COVER
a
c
g
SASH HOLDER
b
d
h
l
k
FRONT SASH
e
f
i
j
SCREWS

6



III. CONTROLS

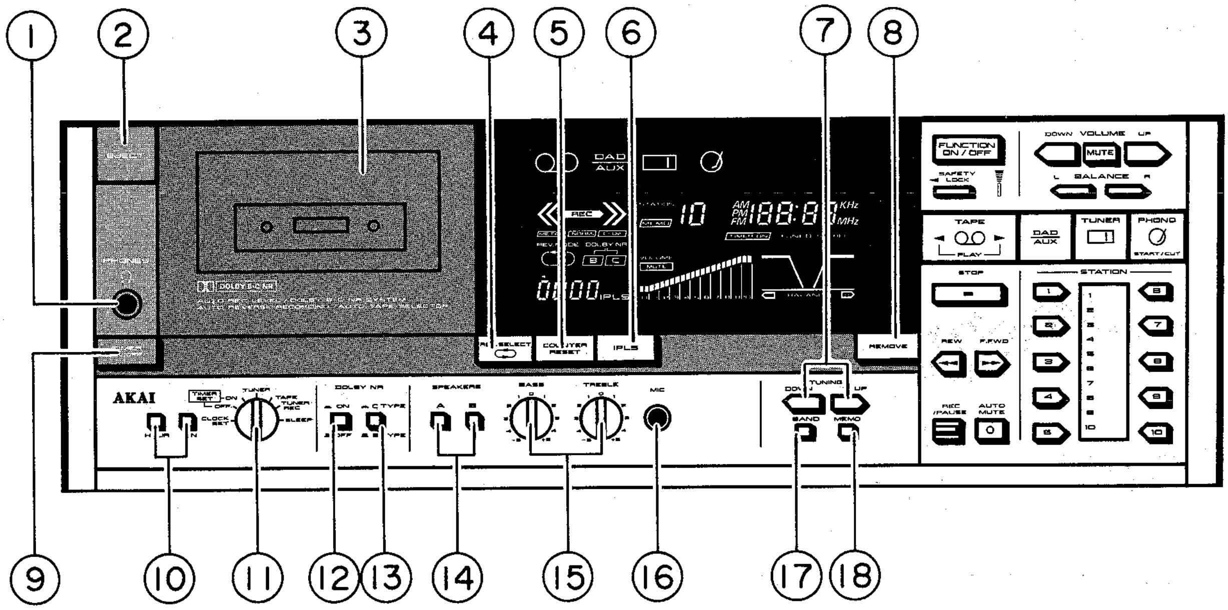

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
EJECT
PHONES
DOLBY B-C NR
DAD AUX
REC
IPLS
COUNTER RESET
REMOVE
AKAI
TIMER SET
TUNER
DOLBY NR
SPEAKERS
BASS
TREBLE
MIC
TUNING
DOWN
UP
BAND
MEMO
FUNCTION ON / OFF
VOLUME
MUTE
SAFETY LOCK
BALANCE
TAPE
PLAY
TUNER
PHONO
STOP
STATION
REW
F.FWD
REC /PAUSE
AUTO MUTE

Fig. 3-1 Front View

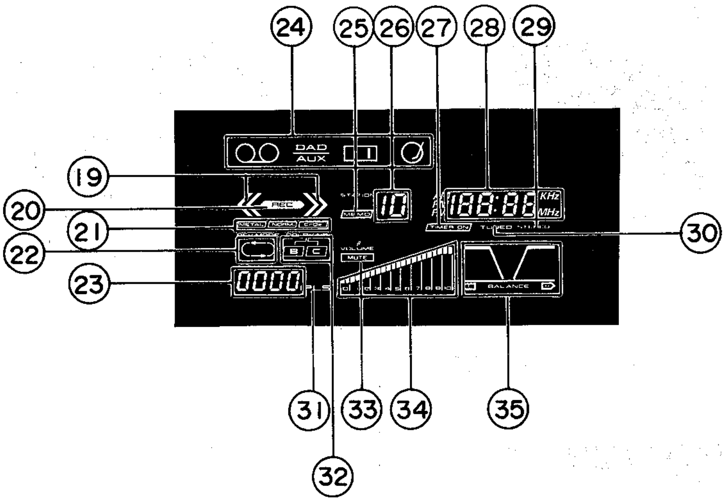
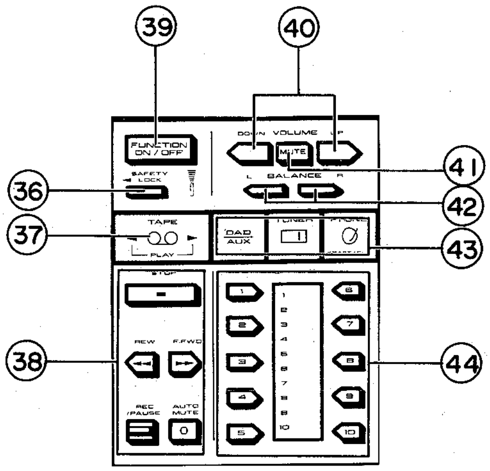

19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
DAD AUX
REC
10
188:88
KHz
MHz
0000
MUTE
BALANCE

Fig. 3-2 Display

1. PHONES JACK
2. EJECT BUTTON
3. CASSETTE HOLDER
4. REV. MODE SELECTOR (One-way, One-cycle, Continuous) BUTTON
5. COUNTER RESET BUTTON
6. IPLS SWITCH
7. TUNING (UP/DOWN) BUTTONS
8. REMOVE BUTTON
9. TIMER ON/OFF SWITCH
10. TIMER ADJUSTMENT (HOUR/MIN) BUTTONS
11. TIMER MODE SELECTOR
12. DOLBY ON/OFF SWITCH
13. DOLBY B/C SWITCH
14. SPEAKERS (A/B) SELECTOR BUTTONS
15. TONE CONTROL VOLUMES (BASS/TREBLE)
16. MICROPHONE JACK
17. BAND SELECTOR BUTTON
18. TUNING MEMO (MEMORY) BUTTON
19. TAPE TRAVEL INDICATORS
20. REC INDICATOR
21. TAPE POSITION INDICATORS
22. REV. MODE INDICATOR
23. TAPE COUNTER
24. INPUT SELECTOR INDICATORS
25. MEMO INDICATOR
26. PRESET STATION INDICATORS
27. TIMER ON INDICATOR
28. TIME AND TUNER FREQUENCY INDICATORS
29. STEREO INDICATOR
30. TUNED INDICATOR
31. IPLS INDICATOR
32. DOLBY NR (B/C) INDICATOR
33. MUTE INDICATOR
34. VOLUME INDICATOR
35. BALANCE INDICATOR


㊴
㊵
FUNCTION ON / OFF
SAFETY LOCK
DOWN VOLUME UP
MUTE
L BALANCE R
㊶
㊱
㊷
TAPE
PLAY
DAD AUX
TUNER
PHONO
㊲
㊸
STOP
REW
F.FWD
REC /PAUSE
AUTO MUTE
㊳
1
2
3
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8
9
10
㊹

Fig. 3-3 Remote Control Unit

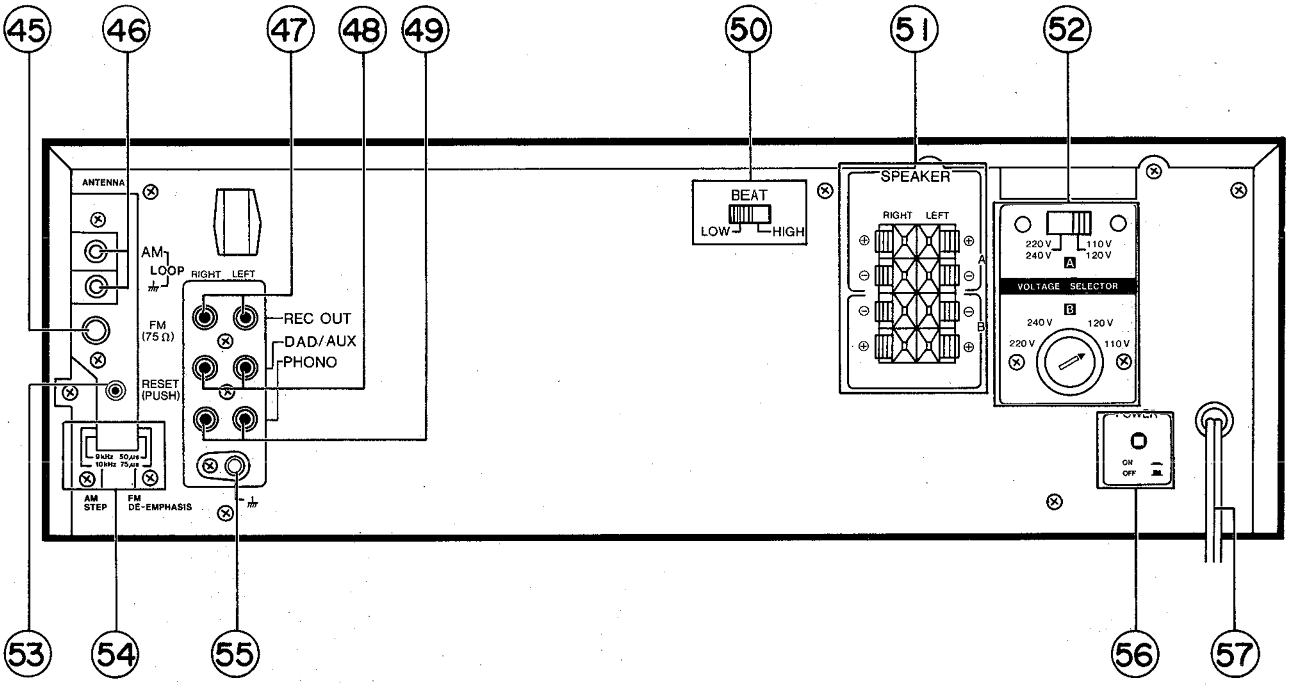

㊺
㊻
㊼
㊽
㊾
㊿
(51)
(52)
ANTENNA
AM LOOP
FM (75 Ω)
RESET (PUSH)
RIGHT LEFT
REC OUT
DAD/AUX
PHONO
9 kHz 50 μs
10 kHz 75 μs
AM STEP
FM DE-EMPHASIS
BEAT
LOW
HIGH
SPEAKER
RIGHT LEFT
A
B
220 V
240 V
110 V
120 V
A
VOLTAGE SELECTOR
B
240 V
120 V
220 V
110 V
POWER
ON
OFF
(53)
(54)
(55)
(56)
(57)

Fig. 3-4 Rear View

36. SAFETY LOCK SWITCH
37. TAPE PLAY BUTTON
38. CASSETTE DECK OPERATION BUTTONS
39. FUNCTION (ON/OFF) SWITCH
40. VOLUME CONTROL (UP/DOWN) BUTTONS
41. MUTE BUTTON
42. BALANCE CONTROL (L/R) BUTTONS
43. INPUT SELECTOR BUTTONS
44. PRESET STATION BUTTONS
45. FM ANTENNA TERMINAL
46. AM ANTENNA TERMINALS
47. REC OUT JACKS
48. DAD/AUX JACKS
49. PHONO JACKS
50. BEAT CANCEL (LOW/HIGH) SWITCH
51. SPEAKER TERMINALS
52. VOLTAGE SELECTORS (A/B): U MODEL ONLY
53. RESET BUTTON
54. AM STEP/FM DE-EMPHASIS SELECTOR SWITCH
55. GROUND TERMINAL
56. POWER SWITCH
57. AC POWER CORD

IV. PRINCIPAL PARTS LOCATION

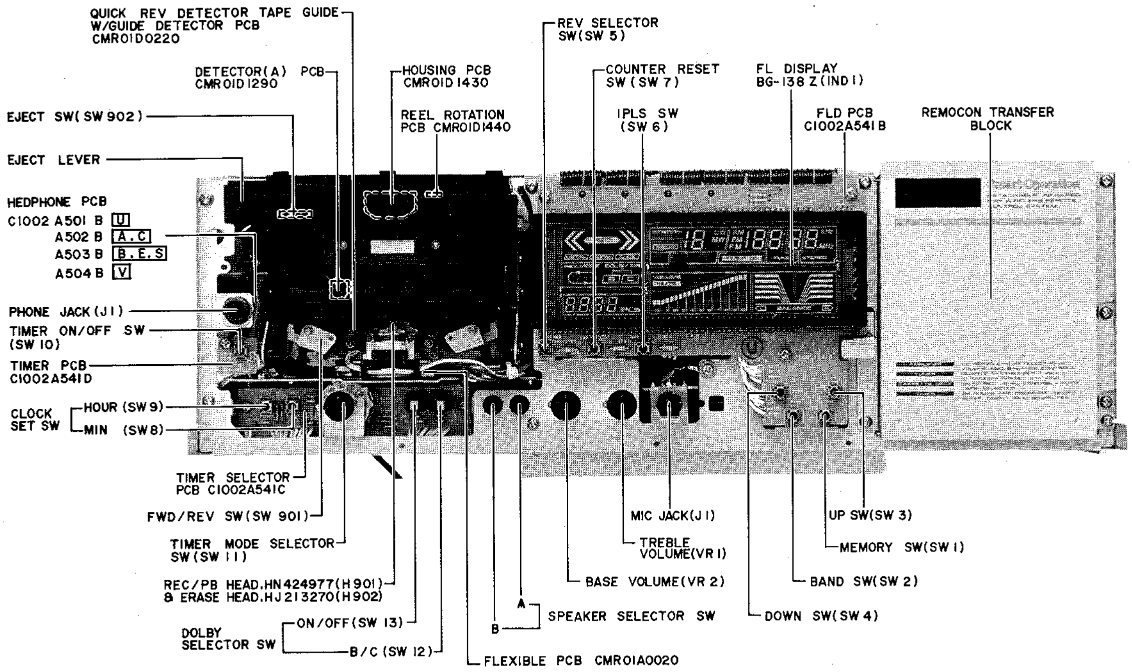

QUICK REV DETECTOR TAPE GUIDE W/GUIDE DETECTOR PCB CMR01D0220
DETECTOR(A) PCB CMR01D1290
HOUSING PCB CMR01D1430
REEL ROTATION PCB CMR01D1440
REV SELECTOR SW(SW 5)
COUNTER RESET SW (SW 7)
IPLS SW (SW 6)
FL DISPLAY BG-138 Z(IND 1)
FLD PCB C1002A541B
REMOCON TRANSFER BLOCK
EJECT SW(SW 902)
EJECT LEVER
HEDPHONE PCB
C1002 A501 B U
A502 B A.C
A503 B B.E.S
A504 B V
PHONE JACK (J1)
TIMER ON/OFF SW (SW 10)
TIMER PCB C1002A541D
CLOCK SET SW
HOUR (SW 9)
MIN (SW 8)
TIMER SELECTOR PCB C1002A541C
FWD/REV SW(SW 901)
TIMER MODE SELECTOR SW (SW 11)
REC/PB HEAD.HN424977(H901) & ERASE HEAD.HJ213270(H902)
DOLBY SELECTOR SW
ON/OFF(SW 13)
B/C (SW 12)
FLEXIBLE PCB CMR01A0020
A
B
SPEAKER SELECTOR SW
BASE VOLUME(VR 2)
MIC JACK(J1)
TREBLE VOLUME(VR 1)
DOWN SW(SW 4)
BAND SW(SW 2)
MEMORY SW(SW 1)
UP SW(SW 3)

Fig. 4-1 Front View

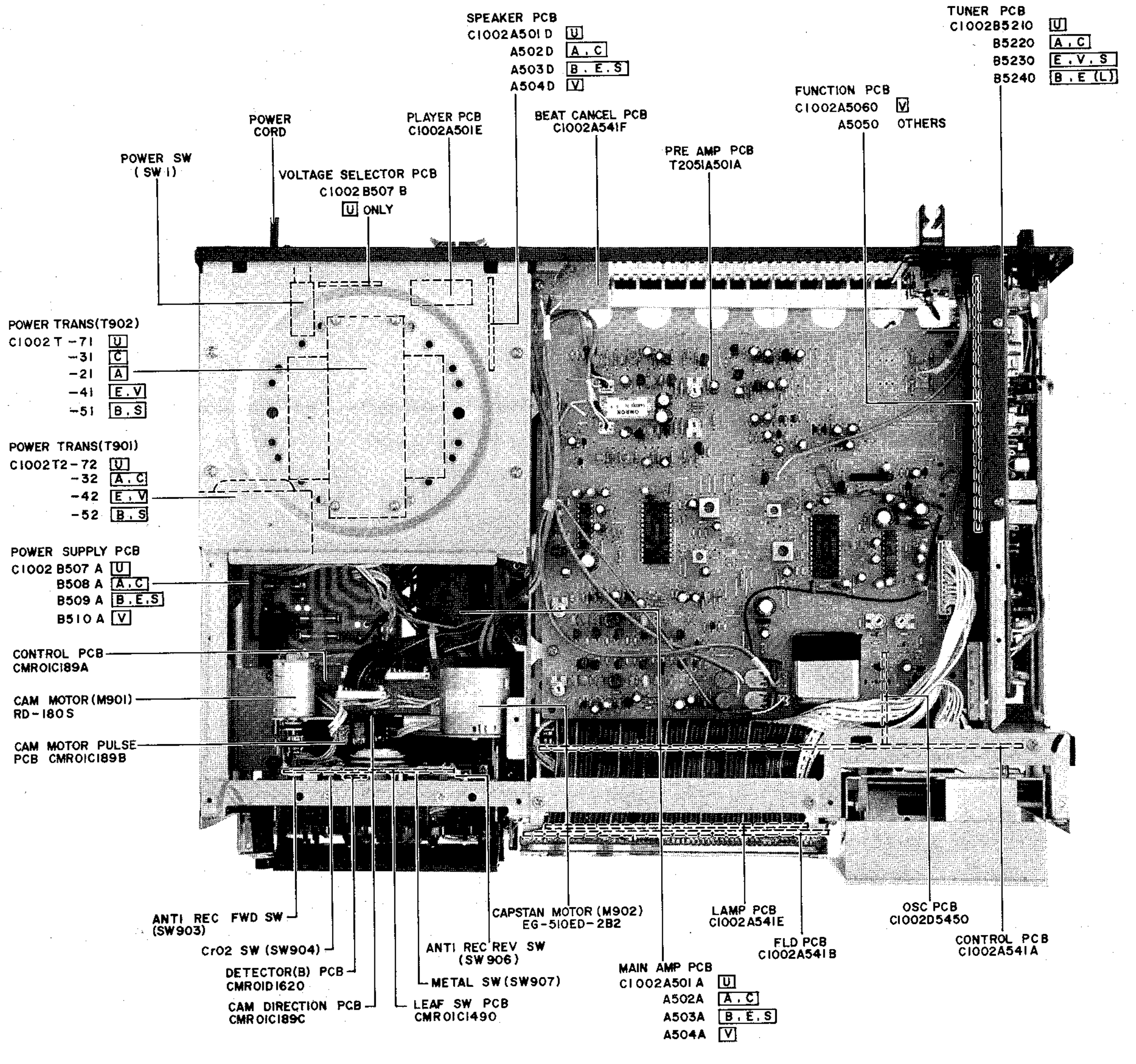

SPEAKER PCB
C1002A501D U
A502D A.C
A503D B.E.S
A504D V
TUNER PCB
C1002B5210 U
B5220 A.C
B5230 E.V.S
B5240 B.E(L)
FUNCTION PCB
C1002A5060 V
A5050 OTHERS
POWER CORD
PLAYER PCB C1002A501E
BEAT CANCEL PCB C1002A541F
PRE AMP PCB T2051A501A
POWER SW (SW 1)
VOLTAGE SELECTOR PCB C1002B507B
U ONLY
POWER TRANS(T902)
C1002T-71 U
-31 C
-21 A
-41 E.V
-51 B.S
POWER TRANS(T901)
C1002T2-72 U
-32 A.C
-42 E.V
-52 B.S
POWER SUPPLY PCB
C1002 B507 A U
B508 A A.C
B509 A B.E.S
B510 A V
CONTROL PCB CMR01C189A
CAM MOTOR(M901) RD-180S
CAM MOTOR PULSE PCB CMR01C189B
ANTI REC FWD SW (SW903)
CrO2 SW (SW904)
DETECTOR(B) PCB CMR01D1620
CAM DIRECTION PCB CMR01C189C
LEAF SW PCB CMR01C1490
METAL SW(SW907)
ANTI REC REV SW (SW906)
CAPSTAN MOTOR(M902) EG-510ED-2B2
MAIN AMP PCB
C1002A501A U
A502A A.C
A503A B.E.S
A504A V
LAMP PCB C1002A541E
FLD PCB C1002A541B
OSC PCB C1002D5450
CONTROL PCB C1002A541A

Fig. 4-2 Top View

V. MECHANICAL ADJUSTMENT

5-1 PINCH ROLLER PRESSURE MEASUREMENT (Refer to Fig. 5-1)

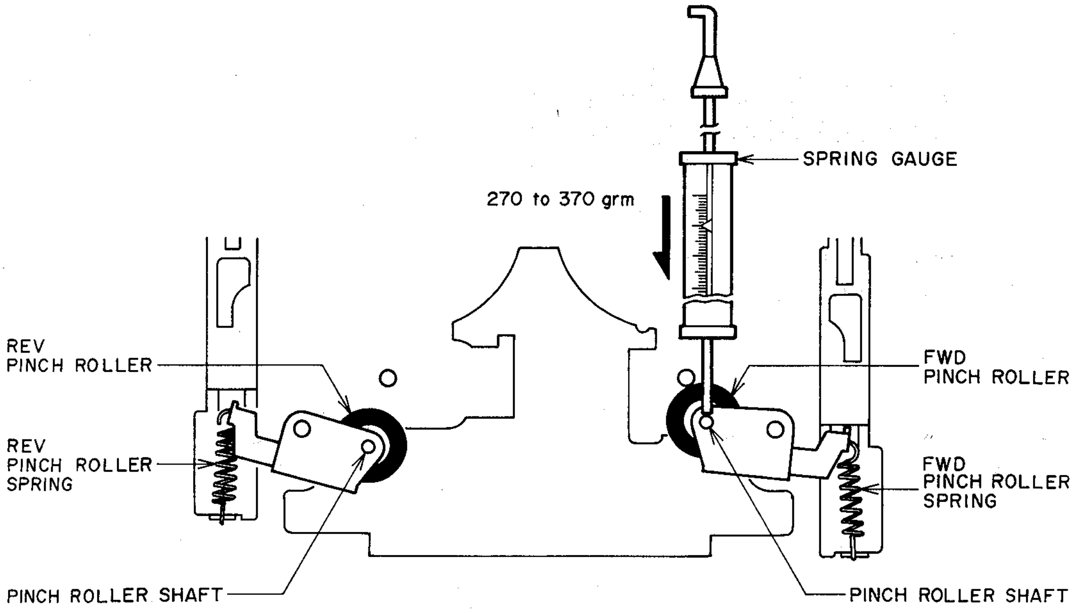

SPRING GAUGE
270 to 370 grm
REV PINCH ROLLER
FWD PINCH ROLLER
REV PINCH ROLLER SPRING
FWD PINCH ROLLER SPRING
PINCH ROLLER SHAFT
PINCH ROLLER SHAFT

Fig. 5-1

Put in FWD PLAY Mode. Push pinch roller shaft down with the spring gauge, and push the pinch roller 1 to 2 mm away from the capstan and release slowly. Read the spring gauge at the moment the pinch roller touches the capstan and begins to rotate. Specified contact pressure measurement is 270 to 370 grams. If the correct measurement is not obtained, replace the pinch roller spring. Do the same for the reverse side.

5-2 WINDING TORQUE MEASUREMENT IN EACH MODE (Refer to Fig. 5-2)

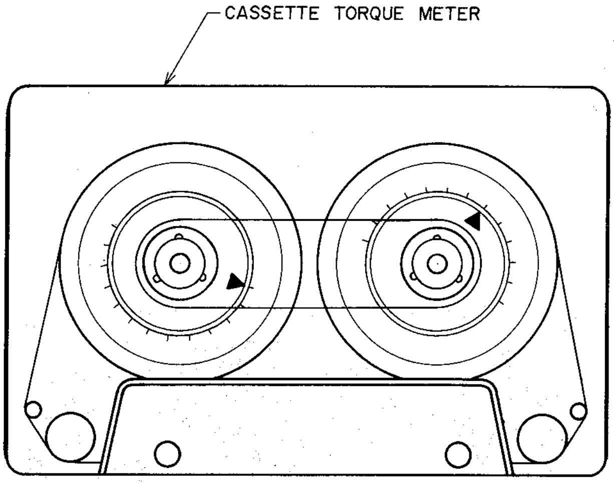

CASSETTE TORQUE METER

Fig. 5-2

Insert a cassette torque meter (AJ-751179) and measure in each mode.

For Fast Forward and Rewind, measure at the end of the tape when the tape has stopped running.

Forward or Reverse mode

Take up Torque: 25 to 45 g-cm

Back Tension Torque: 2 to 5 g-cm

Fast Forward or Rewind mode

Take up Torque: 70 to 150 g-cm

5-3 TAPE SPEED ADJUSTMENT (Refer to Fig. 5-3)

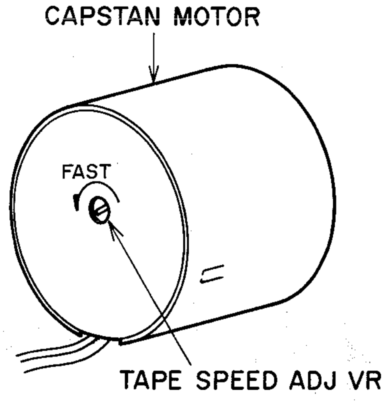

CAPSTAN MOTOR
FAST
TAPE SPEED ADJ VR

Fig. 5-3 Location of Tape Speed Adjustment Variable Resistor

Connect a frequency counter to Line Output terminal. Playback a 1,000 Hz pre-recorded Test Tape (AT-750744), or 3,150 Hz pre-recorded Test Tape (AT-751263), and adjust the Tape Speed Adjustment Variable Resistor to obtain a tape speed of 1002 ± 3 Hz, or 3155 ± 10 Hz.

VI. HEAD ADJUSTMENT

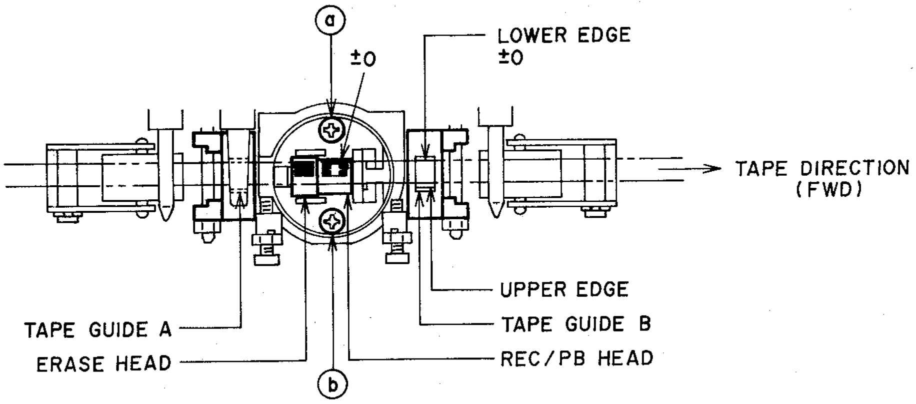

ⓐ
±0
LOWER EDGE
±0
TAPE DIRECTION
(FWD)
UPPER EDGE
TAPE GUIDE A
TAPE GUIDE B
ERASE HEAD
REC/PB HEAD
ⓑ

Fig. 6-1

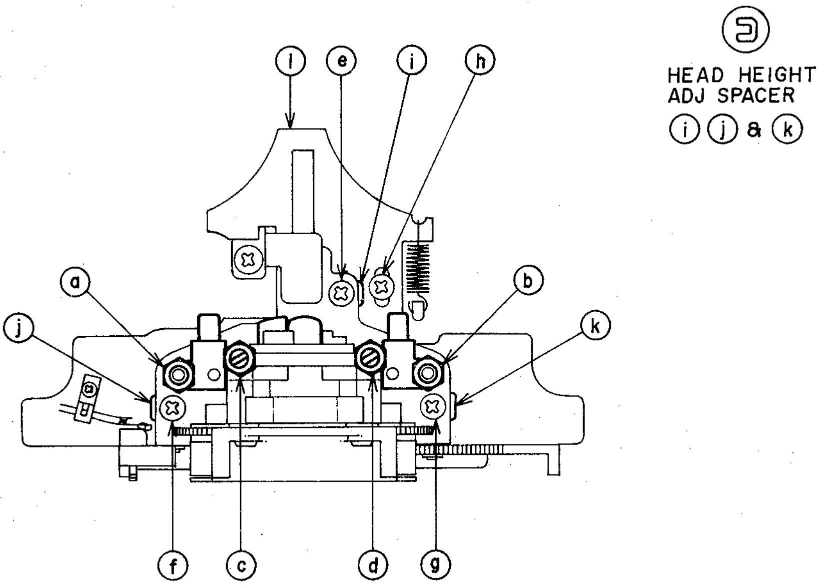

HEAD HEIGHT
ADJ SPACER
ⓘ ⓙ & ⓚ
ⓛ
ⓔ
ⓘ
ⓗ
ⓐ
ⓑ
ⓙ
ⓚ
ⓕ
ⓒ
ⓓ
ⓖ

Fig. 6-2

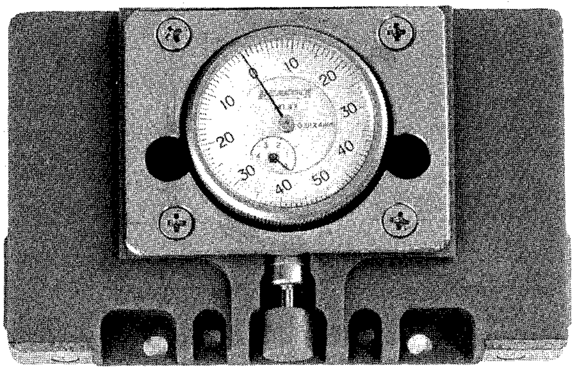


Fig. 6-3 Cassette Head Projection Gauge (AJ-751180)

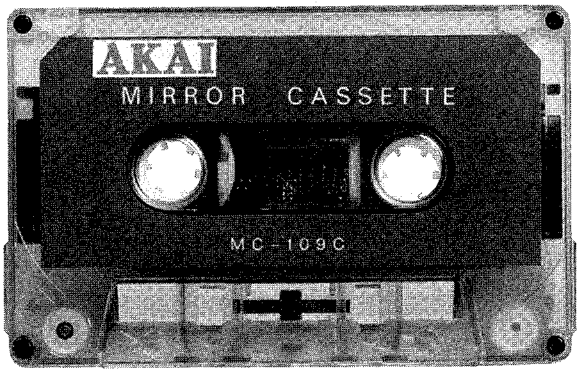

AKAI
MIRROR CASSETTE
MC-109C

Fig. 6-4 Mirror Cassette Tape (AJ-751178)

6-1 TAPE GUIDE ADJUSTMENT (Refer to Figs. 6-1, 6-2 & 6-4)

1) Use a Mirror Cassette Tape (AT-751178) for better visibility of the head area, and select PLAY mode.
2) Adjust the tape guides A and B by turning the tape guide height adjustment nuts ⓐ and ⓑ in Fig. 6-2, so that the upper edge of the tape runs smoothly by the adjacent edge of both tape guides, and the tape is not hitched by those tape guides.

6-2 REC/PB HEAD AZIMUTH ADJUSTMENT (Refer to Fig. 6-2)

Playback a 10 kHz Head Azimuth Adjustment Tape (AT-750778) and adjust the screws ⓒ (FWD direction) and ⓓ (REV direction), so that the levels of both channels are maxima. (Note: Avoid turning the screws too far as other false maxima exist further away on both sides of the correct position.)

6-3 HEAD HEIGHT ADJUSTMENT (Refer to Figs. 6-1 & 6-2)

This adjustment is not necessary since this model FD-7/L is equipped with Rotary Head System (with Erase & REC/PB combination head). However, the confirmation of head height is necessary and it can be done as follows.

1) Confirm the azimuth in item 6-2.
2) Playback a 315 Hz (or 333 Hz) PB level Adjustment Tape (AT-750773) in FWD Play mode, and adjust the PB level Adjuster (VR5 on Pre Amp PCB) so that the LINE OUT level of left channel is −5.5 dBm.
   Then, check the level of the same channel in REV mode. The difference in level between FWD and REV modes should be within ±1 dBm. (−4.5 dBm to −6.5 dBm)
3) If the difference is more than ±1 dBm in item 2), adjust the tape guides A & B by turning both Tape Guide Height Adjustment screws ⓐ & ⓑ (shown Fig. 6-2) in the same direction by 1/4 turn (±0.1 mm), so that difference is within ±1 dBm.
4) The Head Height Adjustment is necessary if still the difference could not be corrected by above adjustment. It can be done by changing the Head Height Adjustment Spacers ⓘ, ⓙ & ⓚ. (The thicknesses of these spacers are ⓘ = 0.45 mm, ⓙ & ⓚ = 0.3 mm).
   Loosen the screws ⓔ, ⓕ & ⓖ for the spacer replacement.
   If the level is lower in REV mode, it means that the head is too high, therefore replace the spacers by thinner ones. When the level is higher in REV mode, replace them by thicker ones.
   After the replacement of those spacers, do the same adjustment in item 1) and check the level of LINE OUT is −5.5 dBm ± 1 dBm.
   For the further confirmation, playback a 4 Track head Height Adjustment Tape (1 kHz/4 Track, AT-750775). Line Output level of both channels should be more than −8 dBm and the difference in level between FWD and REV modes should be within ±1 dBm. Otherwise do the fine adjustment in the same manner as item 3) & 4).
5) When the head replacement is necessary, loosen only the screws ⓐ & ⓑ in Fig. 6-1 for easy replacement.

6-4 HEAD BLOCK PROJECTION ADJUSTMENT (Refer to Figs. 6-2 & 6-3)

Use a Cassette head Projection Gauge (AT-751180) and select FWD or REV play mode.
Loosen the screw ⓗ and adjust Chassis Head Part ⓛ so that the gauge indication at the time is $3.2 \pm {}^{0.15}_{0.05}$ mm.
After the adjustment, apply paint-lock on the screw ⓗ.

VII. ELECTRICAL ADJUSTMENT

7-1 SYSTEM CONTROL P.C BOARD ADJUSTMENT (Refer to Figs. 7-1 & 7-2)

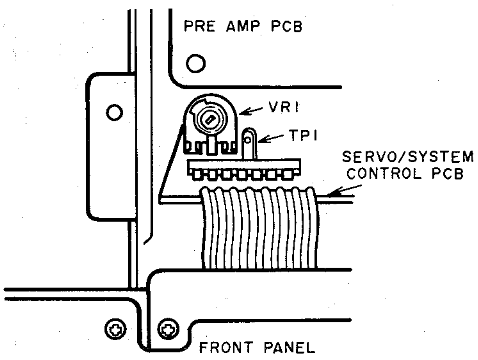

PRE AMP PCB
VR1
TP1
SERVO/SYSTEM CONTROL PCB
FRONT PANEL

Fig. 7-1

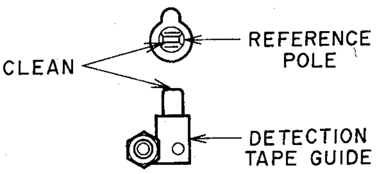

CLEAN
REFERENCE POLE
DETECTION TAPE GUIDE

Fig. 7-2

Adjustment Item	Test Tape Supply Signal	Mode	ADJ Parts	Check Point	Results	Remarks
Quick Reverse Sensitivity	White empty Cassette pack (See Note 1)	FWD PLAY	VR1 (1M)	TP1	12V ± 0.5V (See Note 2)	Connect a Digital Voltmeter between TP1 and Ground.

NOTES:
1. Make a tapeless cassette pack by removing the tape from the white colored cassette tape.
2. Clean the Reference Pole and the Detector Tape Guide prior to this adjustment. (Refer to Fig. 7-2)
   In case of out of adjustment (the voltage does not go up to 12V), remove R80 (1 Mohm) and adjust VR1 so that the voltage is 12V ± 0.5V.
   Otherwise, replace the Detection Tape Guide.

7-2 PRE-AMP P.C BOARD ADJUSTMENT

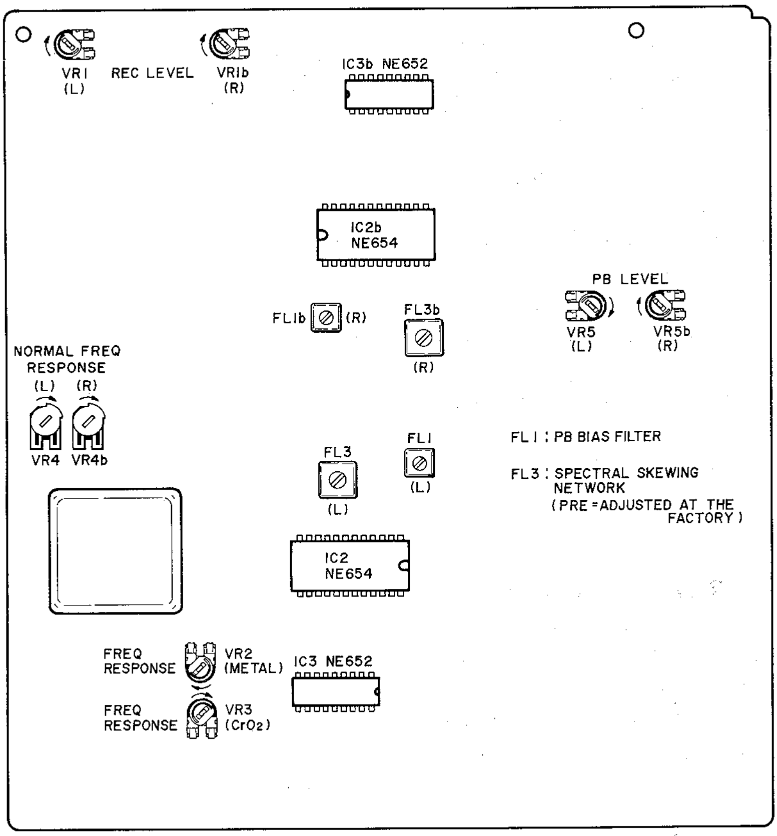

VR1 (L)
REC LEVEL
VR1b (R)
IC3b NE652
IC2b NE654
PB LEVEL
VR5 (L)
VR5b (R)
FL1b (R)
FL3b (R)
NORMAL FREQ RESPONSE
(L) (R)
VR4 VR4b
FL3 (L)
FL1 (L)
FL1 : PB BIAS FILTER
FL3 : SPECTRAL SKEWING NETWORK
(PRE-ADJUSTED AT THE FACTORY)
IC2 NE654
FREQ RESPONSE
VR2 (METAL)
IC3 NE652
FREQ RESPONSE
VR3 (CrO2)

Fig. 7-3 Pre-Amp PCB ADJ Points

Step	Adjustment Item	Test Tape & Supply Signal	Mode	ADJ. Parts	Results	Remarks
1	PB Level	333 Hz (AT-750773) or 315 Hz (AT-750773)	FWD PLAY	VR5 (50K)	−6.0 dBm ± 0.2 dBm (385 mV) −5.5 dBm ± 0.2 dBm (410 mV)	−6.1 dBm ± 1.0 dBm at REV mode −5.5 dBm ± 1.0 dBm at REV mode (See Note 1)
2	Normal Position Frequency Response	Normal Blank Tape 1 kHz, 10 kHz −25.5 dBm	FWD REC/PB	VR4 (100K)	1 kHz, 10 kHz Flat ± 0.5 dBm	
3	CrO_2 Position Frequency Response	CrO_2 Blank Tape 1 kHz, 10 kHz −25.5 dBm	FWD REC/PB	VR3 (20K)	1 kHz, 10 kHz Flat ± 0.5 dBm	
4	Metal Position Frequency Response	Metal Blank Tape 1 kHz, 10 kHz −25.5 dBm	FWD REC/PB	VR2 (3K)	1 kHz, 10 kHz Flat ± 0.5 dBm	
5	REC Level	Normal Blank Tape 1 kHz, −5.5 dBm	FWD REC/PB	VR1 (20K)	−5.5 dBm ± 0.3 dBm (410 mV)	
6	Bias Filter	Metal Blank Tape No Signal Input	REC/ PLAY or REC/ PAUSE	FL1	Minimum Output	Set REC LEVEL to maximum, Connect a 600 ohm dummy to MIC Jack

NOTES:

1. Above adjustments except for Step 6 are all at FWD mode, and these adjustments at REV mode are not necessary, but the confirmation of each step at REV mode should be made.
2. Adjustment should be made with Dolby N.R. at OFF position.
3. Use only the tapes recommended for each adjustment.

NORMAL Tape:	MAXELL	UD	C-60
CrO_2 Tape:	TDK	SA	C-60
METAL Tape:	TDK	MA	C-60

4. Refer to Fig. 7-3 for above adjustments.

VIII. DC RESISTANCE OF VARIOUS COILS

Parts	Name	DC Resistance
REC/PB HEAD (H901-1, 2)	COMBO HEAD HD425804RVJ	360 ohms ± 25%
ERASE HEAD (H902)		3.5 ohms
RELAY (RL1-PRE AMP)	LAB2NS	1000 ohms
RELAY (RL1-POWER)	G2R-1112-PFD-V	275 ohms ± 10%
RELAY (RL1-MAIN AMP)	G4Z-2282P	800 ohms ± 10%

IX. CLASSIFICATION OF VARIOUS P.C BOARDS

9-1 P.C BOARD TITLES and IDENTIFICATION NUMBERS

P.C Board Title		P.C Board Number	Destination	Model
Main Amp	P.C Board	C1002A501A	U	FD-7
Main Amp	P.C Board	C1002A502A	C, A	FD-7
Main Amp	P.C Board	C1002A503A	E, S	FD-7
Main Amp	P.C Board	C1002A504A	V	FD-7
Main Amp	P.C Board	C1002A505A	E, B	FD-7/L
Pre Amp	P.C Board	T2051A501A (3ED)	All	FD-7/L
Tuner	P.C Board	C1002B5210	U	FD-7
Tuner	P.C Board	C1002B5220	C, A	FD-7
Tuner	P.C Board	C1002B5230	E, V, S	FD-7
Tuner	P.C Board	C1002B5240	E, B	FD-7/L
Control	P.C Board	C1002A541A	All	FD-7/L
FLD	P.C Board	C1002A541B	All	FD-7/L
Function	P.C Board	C1002A5050 (2ED)	U, C, A, E, S	FD-7/L
Function	P.C Board	C1002A5060 (2ED)	V	FD-7
Power Supply	P.C Board	C1002B507A	U	FD-7
Power Supply	P.C Board	C1002B508A	C, A	FD-7
Power Supply	P.C Board	C1002B509A	E, B, S	FD-7/L
Power Supply	P.C Board	C1002B510A	V	FD-7
Voltage Selector	P.C Board	C1002B507B	U	FD-7
Beat Cancel	P.C Board	C1002A541F	All	FD-7/L
Timer Selector	P.C Board	C1002A541C	All	FD-7/L
Timer	P.C Board	C1002A541D	All	FD-7/L
Lamp	P.C Board	C1002A541E	All	FD-7/L
Mic	P.C Board	C1002A501C	All	FD-7/L
Head Phone	P.C Board	C1002A501B	U	FD-7
Head Phone	P.C Board	C1002A502B	C, A	FD-7
Head Phone	P.C Board	C1002A503B	E, B, S	FD-7/L
Head Phone	P.C Board	C1002A504B	V	FD-7
Speaker	P.C Board	C1002A501D	U	FD-7
Speaker	P.C Board	C1002A502D	C, A	FD-7
Speaker	P.C Board	C1002A503D	E, B, S	FD-7/L
Speaker	P.C Board	C1002A504D	V	FD-7
TR	P.C Board	C1002A501F	All	FD-7/L
OSC	P.C Board	C1002D5450	All	FD-7/L
Control	P.C Board	CMR01C189A	All	FD-7/L
Cam Motor Pulse	P.C Board	CMR01C189B	All	FD-7/L
Cam Direction	P.C Board	CMR01C189C	All	FD-7/L
Reel Rotation	P.C Board	CMR01D1440	All	FD-7/L

P.C Board Title		P.C Board Number	Destination	Model
Detector (A)	P.C Board	CMR01D1290	All	FD-7/L
Detector (B)	P.C Board	CMR01D1620	All	FD-7/L
Leaf Switch	P.C Board	CMR01C1490	All	FD-7/L
Housing	P.C Board	CMR01D1430	All	FD-7/L
Guide Detector	P.C Board	CMR01D0220	All	FD-7/L
Flexible	P.C Board	CMR01A0020	All	FD-7/L

9-2. COMPOSITION OF VARIOUS P.C BOARD

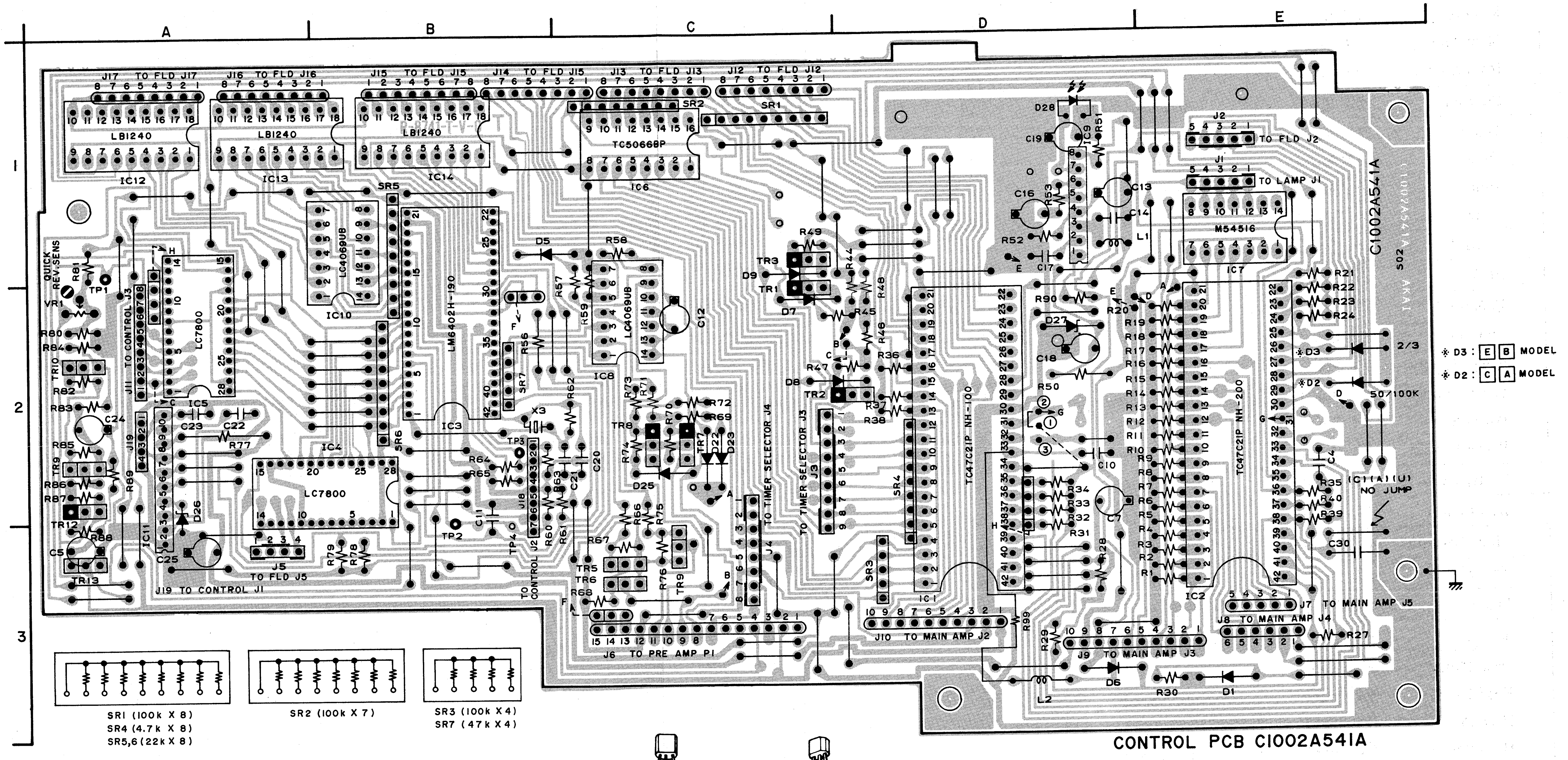
1) CONTROL P.C BOARD C1002A541A and OSC P.C BOARD C1002D5450

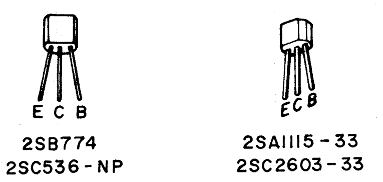
LOCATION OF COMPONENTS

TR
TR1............C2
TR2............D2
TR3............C1
TR5,6,9........C3
TR7............C2
TR10 to 12.....A2
TR13...........A3

IC
IC1............D2
IC2............E2
IC3,4..........B2
IC5............A2
IC6............C1
IC7............E1
IC8............C2
IC9............D1
IC10...........B1
IC11...........A2
IC12,13........A1
IC14...........B1

TERMINALS
J1,2...........E1
J3.............C2
J4.............C3
J5.............A3
J6.............C3
J7,8...........E3
J9,10..........D3
J11............A2
J12,13.........C1
J14,15.........A2
J16,17.........A1
J18............B2
J19............A2
1 to 3 ......D2


A
B
C
D
E
1
2
3
J17 TO FLD J17
J16 TO FLD J16
J15 TO FLD J15
J14 TO FLD J15
J13 TO FLD J13
J12 TO FLD J12
LB1240
TC50668P
SR1
SR2
SR3
SR4
SR5
SR6
SR7
IC12
IC13
IC14
IC6
IC10
LC4069UB
LM6402H-190
LC7800
IC8
IC3
IC4
IC5
IC11
IC1
TC47C21P NH-100
IC2
TC47C21P NH-200
IC7
M54516
QUICK REV.SENS
VR1
TP1
TP2
TP3
TP4
J11 TO CONTROL J3
J19
J19 TO CONTROL J1
J5 TO FLD J5
TO CONTROL J2
J18
TO TIMER SELECTOR J4
TO TIMER SELECTOR J3
J4
J3
J6 TO PRE AMP P1
J10 TO MAIN AMP J2
J9 TO MAIN AMP J3
J8 TO MAIN AMP J4
J7 TO MAIN AMP J5
J2 TO FLD J2
J1 TO LAMP J1
X3
L1
L2
D28
C19
C16
C13
C14
C17
E
R52
R53
R51
R90
R20
D27
C18
R50
C10
C7
R31
R28
R99
R29
D6
R30
D1
R27
C30
*D3
*D2
2/3
50/100K
IC1 (A) (U)
NO JUMP
C1002A541A
AKAI
CONTROL PCB C1002A541A
* D3 : E B MODEL
* D2 : C A MODEL
SR1 (100k X 8)
SR4 (4.7k X 8)
SR5,6 (22k X 8)
SR2 (100k X 7)
SR3 (100k X 4)
SR7 (47k X 4)


E C B
2SB774
2SC536-NP
ECB
2SA1115-33
2SC2603-33

TR1,2,3,7,12 --- 2SA1115-33(E,F)
TR5,6 -------- 2SC536NP(E,F,G)
TR8 ----------2SB774(Q,R,S)
TR9,10,11,13----2SC2603-33(F,G)

■●● = PNP TRANSISTOR
B

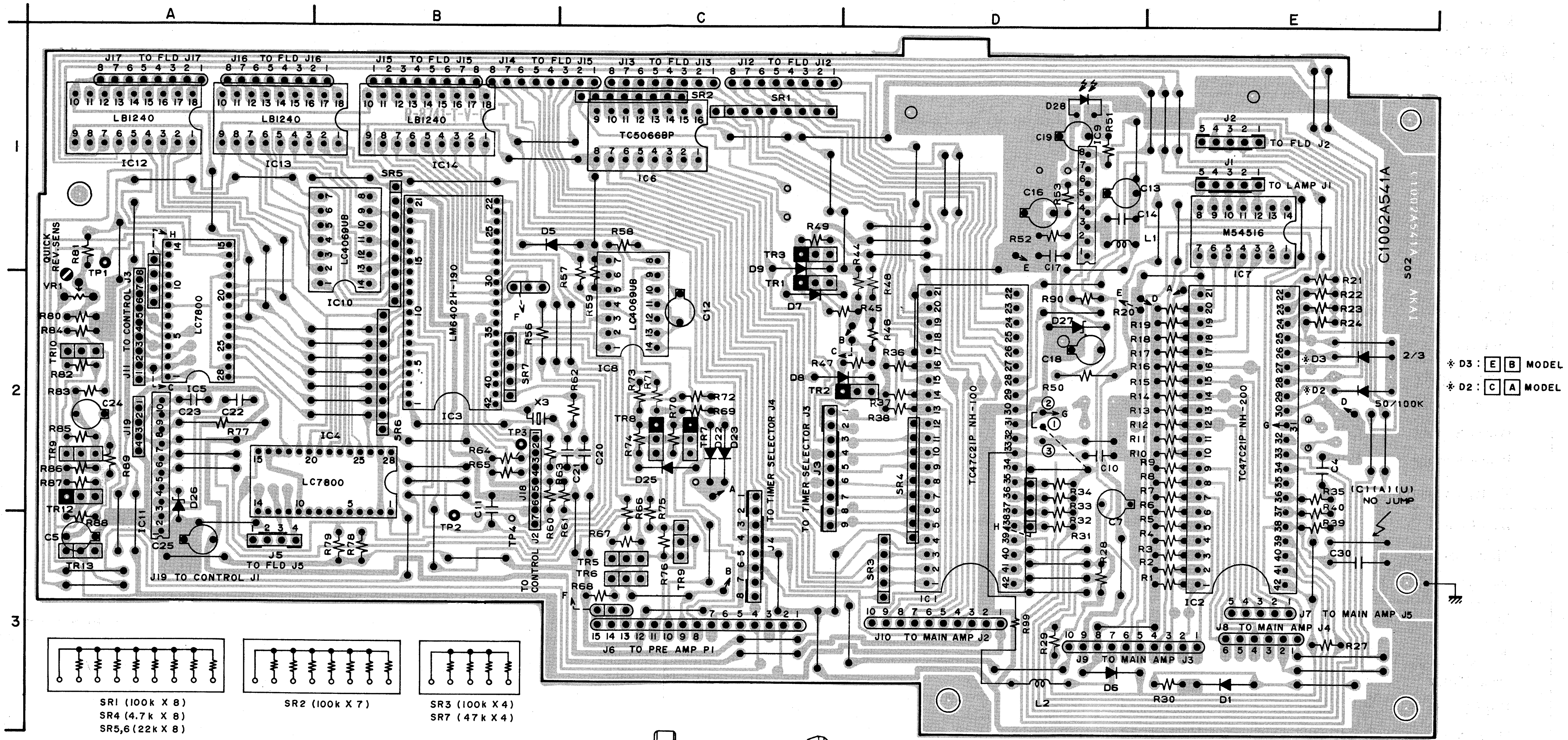
●●● = NPN TRANSISTOR
B

9-2. COMPOSITION OF VARIOUS P.C BOARD

1) CONTROL P.C BOARD C1002A541A and OSC P.C BOARD C1002D5450

LOCATION OF COMPONENTS

TR	
TR1	C2
TR2	D2
TR3	C1
TR5,6,9	C3
TR7	C2
TR10 to 12	A2
TR13	A3
IC	
IC1	D2
IC2	E2
IC3,4	B2
IC5	A2
IC6	C1
IC7	E1
IC8	C2
IC9	D1
IC10	B1
IC11	A2
IC12,13	A1
IC14	B1
TERMINALS	
J1,2	E1
J3	C2
J4	C3
J5	A3
J6	C3
J7,8	E3
J9,10	D3
J11	A2
J12,13	C1
J14,15	A2
J16,17	A1
J18	B2
J19	A2
1 to 3	D2

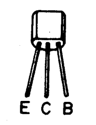

A
B
C
D
E
1
2
3
J17 TO FLD J17
J16 TO FLD J16
J15 TO FLD J15
J14 TO FLD J15
J13 TO FLD J13
J12 TO FLD J12
LB1240
IC12
IC13
IC14
SR1
SR2
TC5066BP
IC6
SR5
SR6
SR7
SR3
SR4
LC4069UB
IC10
LM6402H-190
LC7800
IC8
IC3
IC4
IC5
IC11
IC1
IC2
IC7
IC9
M54516
TC47C21P NH-100
TC47C21P NH-200
QUICK REV. SENS
VR1
TP1
TP2
TP3
TP4
X3
J11 TO CONTROL J3
J19 TO CONTROL J1
J5 TO FLD J5
TO CONTROL J2
J18
TO TIMER SELECTOR J4
TO TIMER SELECTOR J3
J4
J3
J6 TO PRE AMP P1
J10 TO MAIN AMP J2
J9 TO MAIN AMP J3
J8 TO MAIN AMP J4
J7 TO MAIN AMP J5
J2 TO FLD J2
J1 TO LAMP J1
IC1 (A) (U) NO JUMP
50/100K
2/3
C1002A541A
※ D3 : E B MODEL
※ D2 : C A MODEL
SR1 (100k X 8)
SR4 (4.7k X 8)
SR5,6 (22k X 8)
SR2 (100k X 7)
SR3 (100k X 4)
SR7 (47k X 4)

CONTROL PCB C1002A541A

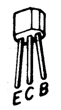
TR1,2,3,7,12 --- 2SA1115-33(E,F)
TR5,6 -------- 2SC536NP(E,F,G)
TR8 ---------- 2SB774(Q,R,S)
TR9,10,11,13 ---- 2SC2603-33(F,G)

■ ● ● = PNP TRANSISTOR
B

● ● ● = NPN TRANSISTOR
B

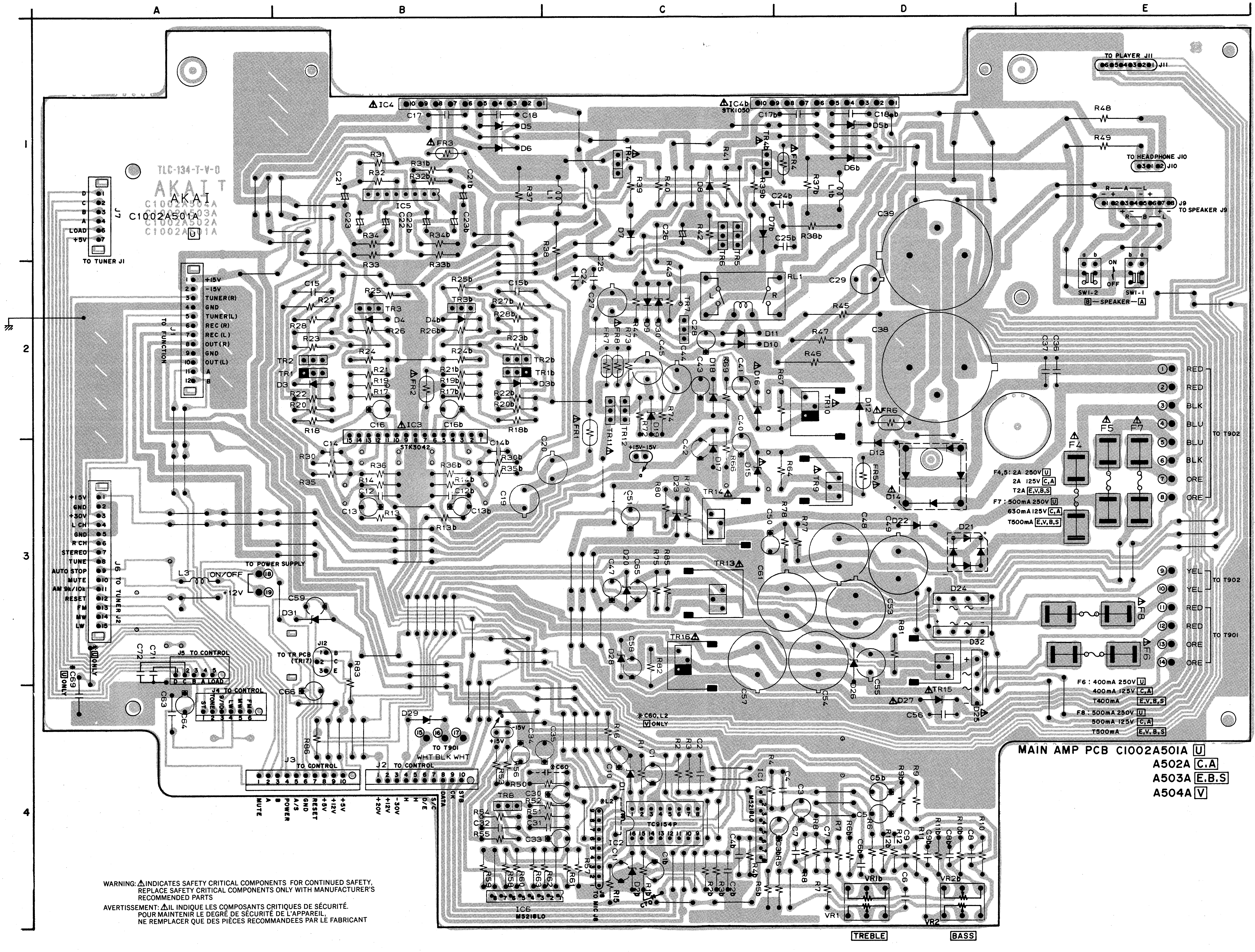


2SB774
2SC536-NP



2SA1115-33
2SC2603-33

2) MAIN AMP P.C BOARD C1002A501A, C1002A502A, C1002A503A and C1002A504A


A
B
C
D
E
1
2
3
4
AKAI
C1002A501A
TLC-134-T-V-0
TO TUNER J1
J7
D
C
B
A
LOAD
+5V
J1 TO FUNCTION
+15V
-15V
TUNER(R)
GND
TUNER(L)
REC (R)
REC (L)
OUT(R)
GND
OUT(L)
A
B
J6 TO TUNER J2
+15V
GND
+30V
L CH
GND
R CH
STEREO
TUNE
AUTO STOP
MUTE
AM 9k/10k
RESET
FM
MW
LW
TO POWER SUPPLY
ON/OFF
+12V
J5 TO CONTROL
J4 TO CONTROL
TO TR PCB (TR17)
J12
J3 TO CONTROL
J2 TO CONTROL
MUTE
A
B
A/S
POWER
GND
RESET
+8V
+5V
+20V
+12V
-30V
H
H
D/E
DATA
S/C
CK
STB
TO T901
WHT BLK WHT
IC4
IC4b
STK1050
IC3
STK5042
IC5
IC6
M5218L0
TC9154P
TO PLAYER J11
TO HEADPHONE J10
J9
TO SPEAKER J9
SW1-2
SW1-1
ON
OFF
B —SPEAKER— A
RL1
RED
RED
BLK
BLU
BLU
BLK
ORE
ORE
TO T902
YEL
YEL
RED
RED
ORE
ORE
TO T902
TO T901
F4,5: 2A 250V U
2A 125V C,A
T2A E,V,B,S
F7: 500mA 250V U
630mA 125V C,A
T500mA E,V,B,S
F6: 400mA 250V U
400mA 125V C,A
T400mA E,V,B,S
F8: 500mA 250V U
500mA 125V C,A
T500mA E,V,B,S
*C60, L2 V ONLY
C69 D ONLY
VR1
VR1b
VR2
VR2b
TREBLE
BASS
MAIN AMP PCB C1002A501A U
A502A C.A
A503A E.B.S
A504A V

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

LOCATION OF COMPONENTS

TR

TR1,1b, 2,2b,3,3b	B2
TR4,4b,5,6	C1
TR7	C2
TR8	B4
TR9	D3
TR10	D2
TR11,12	C2
TR13,14,16	C3
TR15	D3

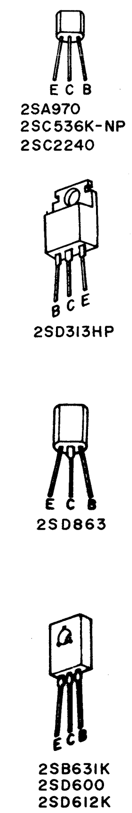
IC

IC1,2	C4
IC3	B2
IC4	B1
IC4b	D1
IC5	B1
IC6	B4

TERMINALS

J1	A2
J2,3	B4
J4	A4
J5,6	A3
J7	A1
J8	C4
J9 to 11	E1
J12	B3
1 to 5	E2
6 to 14	E3

TR1	2SA970(GR,BL)
TR2to6,8	2SC2240(GR,BL)
TR7	2SD863(E,F)
TR9,13	2SD600K(E,F)
TR10,16	2SB631K(E,F)
TR11,12	2SC536KNP(E,F)
TR14	2SD313HP(E,F)
TR15,17	2SD612K(E,F)


E C B
2SA970
2SC536K-NP
2SC2240
B C E
2SD313HP
E C B
2SD863
E C B
2SB631K
2SD600
2SD612K

3) PRE AMP P.C BOARD T2051A501A (2ED)

LOCATION OF COMPONENTS

IC

IC2 ------- B2
IC2b ------ D2
IC3 ------- A2
IC3b ------ E2
IC5 ------- E3

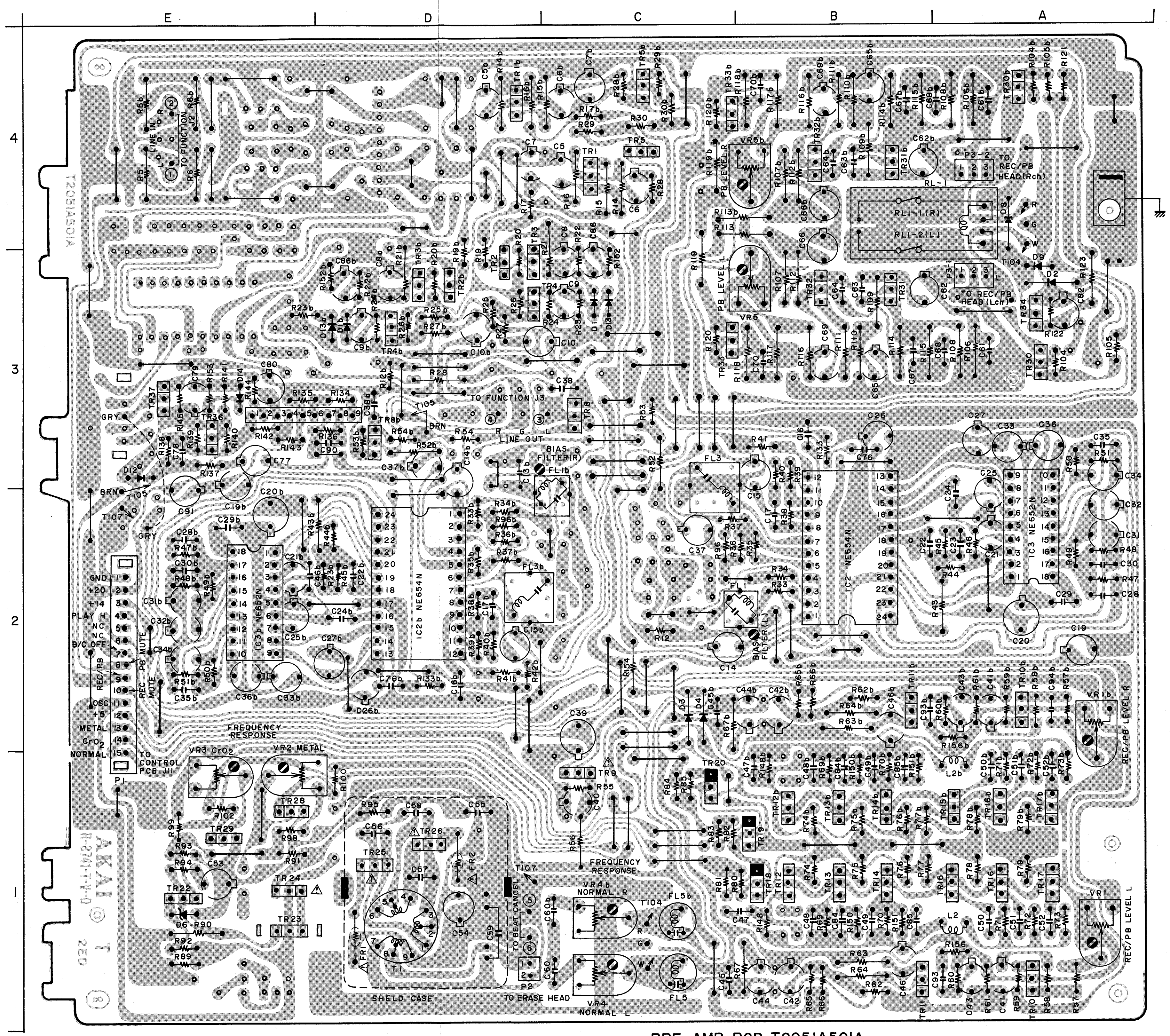
TR

TR1 ------- C4
TR1b ------ D4
TR2,2b ---- D3
TR3,3b ---- D3
TR4,4b ---- D3
TR5,5b ---- C4
TR8 ------- C3
TR8b ------ D3
TR9 ------- C1
TR10 ------ A1
TR10b ----- A2
TR11 ------ B1
TR11b ----- B2
TR12,12b -- B1
TR13,13b -- B1
TR14,14b -- B1
TR15,15b -- A1
TR16,16b -- A1
TR17,17b -- A1
TR18 ------ B1

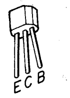
TR19 --- B1
TR20 --- C1
TR22 --- E1
TR23 --- E1
TR24 --- E1
TR25 --- D1
TR26 --- D1
TR28 --- E1
TR29 --- E1
TR30 --- A3
TR30b -- A4
TR31 --- B3
TR31b -- B4
TR32 --- B3
TR32b -- B4
TR33 --- C3
TR33b -- C4
TR34 --- A3
TR36 --- E3
TR37 --- E3

TERMINAL

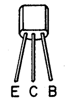
P1 -------- E2
P2 -------- D1
P3-1 ------ A3
P3-2 ------ A4


E
D
C
B
A
4
3
2
1
T2051A501A
AKAI
R-8741-1-V-0
T
2ED
TO FUNCTION J2
LINE IN
TO FUNCTION J3
LINE OUT
BIAS FILTER(R)
BIAS FILTER(L)
TO REC/PB HEAD(Rch)
TO REC/PB HEAD(Lch)
RL1-1(R)
RL1-2(L)
PB LEVEL R
PB LEVEL L
VR5
VR5b
IC2 NE654N
IC2b NE654N
IC3 NE652N
IC3b NE652N
FREQUENCY RESPONSE
VR3 CrO2
VR2 METAL
GND
+20
+14
PLAY H
NC
NC
B/C OFF
REC/PB
REC PB MUTE
MUTE
OSC
+5
METAL
CrO2
NORMAL
TO CONTROL PCB J11
P1
SHELD CASE
TO BEAT CANCEL
P2
TO ERASE HEAD
VR4b NORMAL R
VR4 NORMAL L
FL5b
FL5
T1
VR1b
REC/PB LEVEL R
VR1
REC/PB LEVEL L

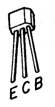
PRE AMP PCB T2051A501A



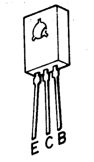
2SA1115
2SC2603



2SC1843
2SC2274
2SC2320
2SC2320L



2SD1012V



2SD894

TR1,32 ----- 2SC2320L(F,G)
TR2 -------- 2SC2320 (G)
TR3,4 ------ 2SC2320(F,G)
TR5,8,11 to 17,33--2SC2320(E,F)
TR9 -------- 2SD894
TR10 ------- 2SD1012V(E,F)

TR18 to 20 ---2SA1115(E,F)
TR22,23,28,
29,34,36,37--2SC2603(E,F)
TR24 ------2SC2274K(E,F)
TR25,26------2SC2274K(E)
TR30--------2SD1012V(E,G)
TR31--------2SC1843(E,F)

■●● = PNP TRANSISTOR
B

●●● = NPN TRANSISTOR
B

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

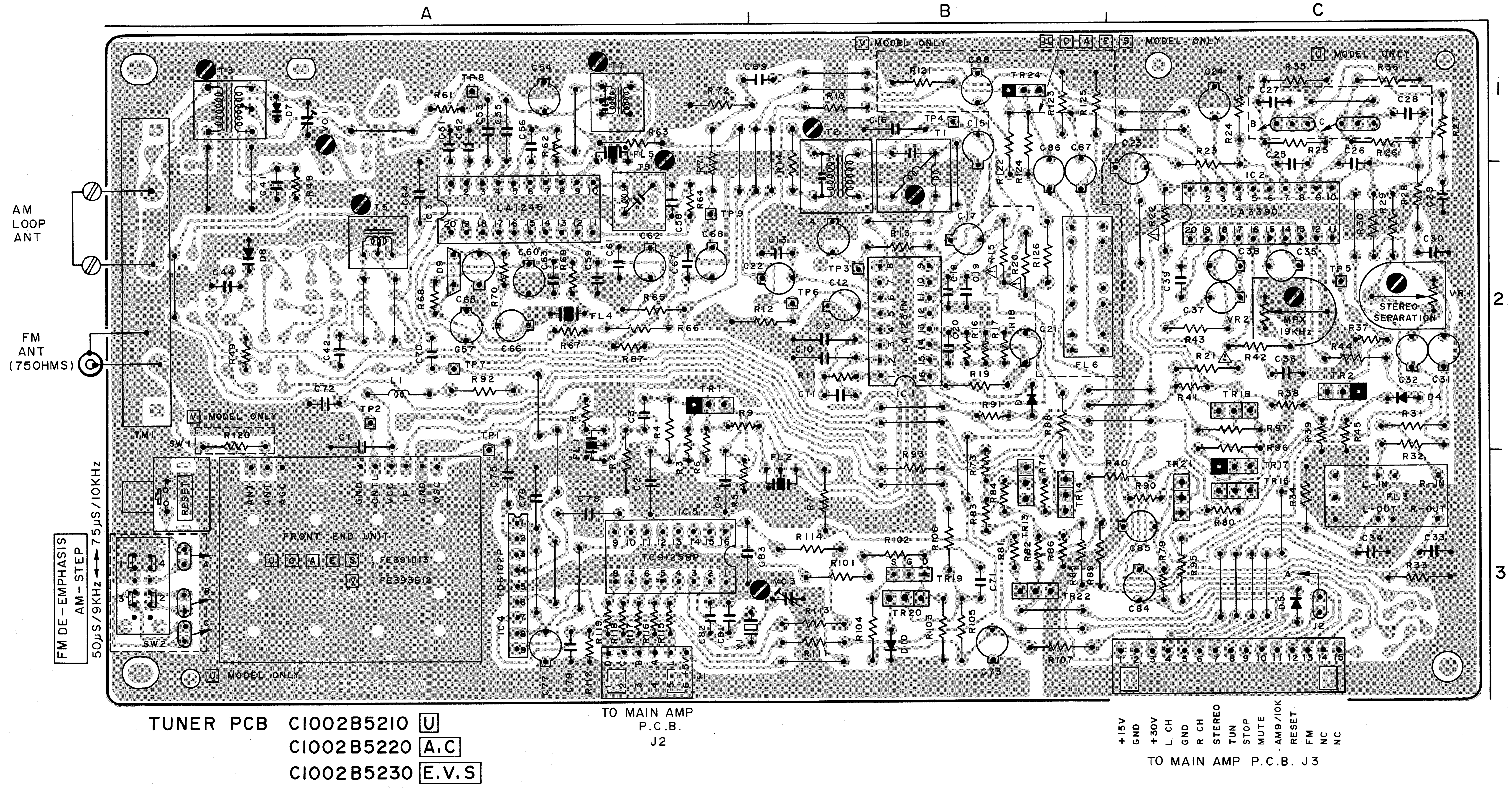
AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

4) TUNER P.C BOARD C1002B5210, C1002B5220 and C1002B5230 (FD-7)

TP1	FM OSC	T1	FM CENTER VOLTAGE
TP2	CONTROL VOLTAGE	T2	DISTORTION
TP3	FM CENTER	T3	MW SENS (LOW)
TP4	FM CENTER	T5	MW OSC
TP5	19kHz	T7	AM IF
TP6	FM MONO (TO GND)	T8	
TP7	AM OSC	VC1	MW SENS (HIGH)
TP8	AM IN	VC3	FM OSC
TP9	AM OUT		

LOCATION OF COMPONENTS

IC		TR		TERMINAL	
IC 1	2B	TR 1	2A	J1	3A
IC 2	2C	TR 2, 18	2C	J2	3C
IC 3	2A	TR13, 14, 19, 20, 22	3B		
IC4, 5	3A	TR16, 17, 21	3C		
		TR24	1B		


A
B
C
1
2
3
AM LOOP ANT
FM ANT (75OHMS)
FM DE-EMPHASIS
AM-STEP
50µS/9KHz ↔ 75µS/10KHz
V MODEL ONLY
U C A E S MODEL ONLY
U MODEL ONLY
RESET
ANT ANT AGC GND CNTL VCC IF GND OSC
FRONT END UNIT
U C A E S ; FE391U13
V ; FE393E12
AKAI
C1002B5210-40
LA1245
LA3390
LA1231N
TC9125BP
TD6102P
STEREO SEPARATION
MPX 19KHz
L-IN R-IN
FL3
L-OUT R-OUT
TO MAIN AMP P.C.B. J2
+15V GND +30V L CH GND R CH STEREO TUN STOP MUTE AM9/10K RESET FM NC NC
TO MAIN AMP P.C.B. J3

TUNER PCB C1002B5210 U
C1002B5220 A.C
C1002B5230 E.V.S

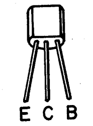
TR1
2SC3000

TR2, 17
2SA608K-NP

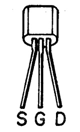
TR13, 14, 16, 18, 20, 22
2SC536K-NP

TR19
2SK223

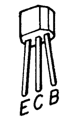
TR21, 24
2SC2603



2SC3000
2SA608K-NP
2SC536K-NP



2SK223



2SC2603

WARNING: △ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: △ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

5) TUNER P.C BOARD C1002B5240 (FD-7L)

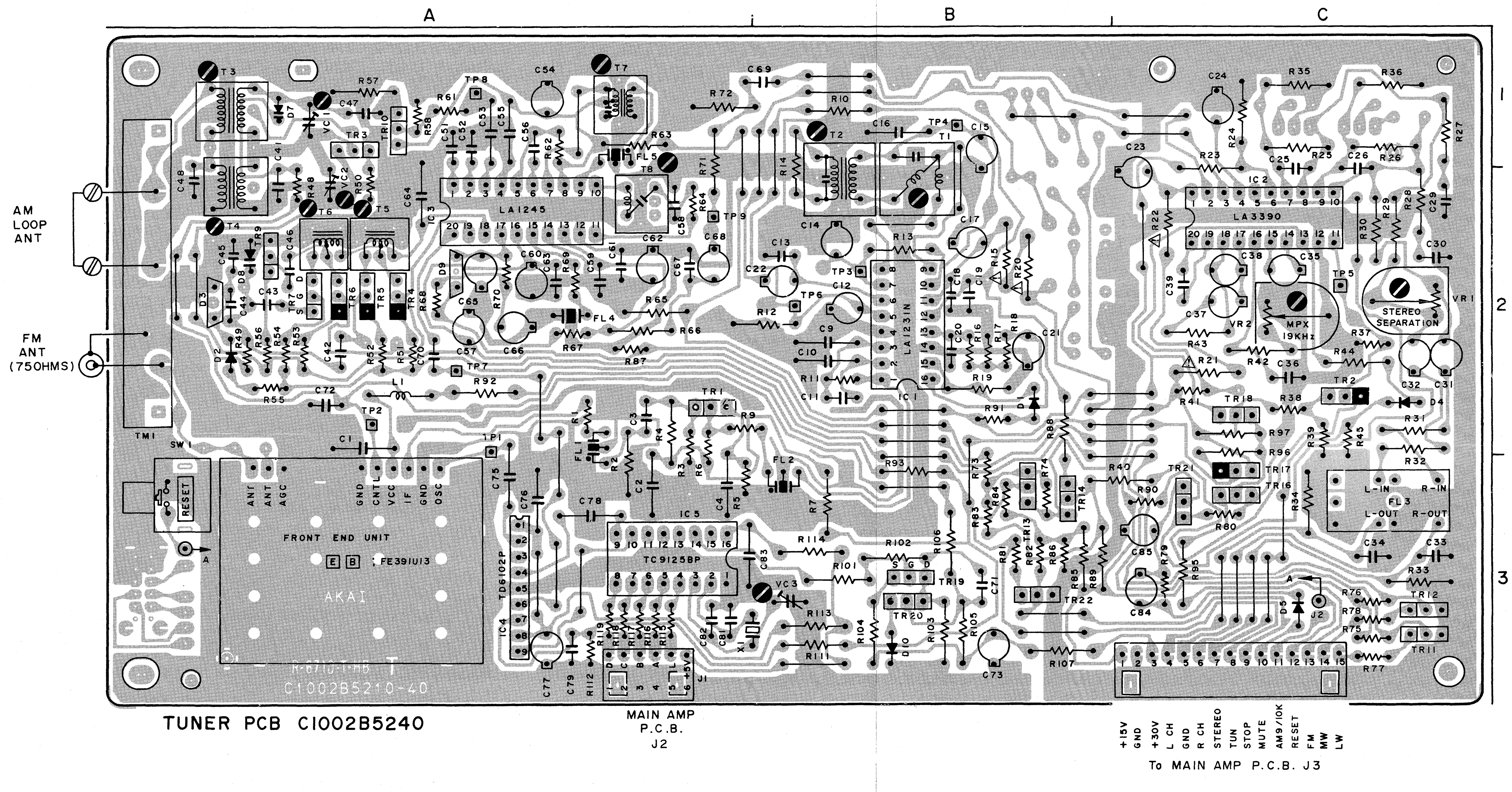
T1	FM CENTER VOLTAGE	TP1	FM OSC
T2	DISTORTION	TP2	CONTROL VOLTAGE
T3	MW SENS (LOW)	TP3	FM CENTER
T4	LW SENS (LOW)	TP4	FM CENTER
T5	MW OSC	TP5	19kHz
T6	LW OSC	TP6	FM MONO (TO GND)
T7	AM IF	TP7	AM OSC
T8		TP8	AM IN
VC1	MW SENS (HIGH)	TP9	AM OUT
VC2	LW SENS (HIGH)		
VC3	FM OSC		

LOCATION COMPONENTS

IC
IC 1 ------ 2B
IC 2 ------ 2C
IC 3 ------ 2A
IC4,5 --- 3A

TR
TR 1, 4 to 7, 9 ---- 2A
TR 3, 10 ---------- 1A
TR 2, 18 ---------- 2C
TR13, 14, 19, 20, 22 -- 3B
TR11, 12, 16, 17, 21 -- 3C

TERMINAL
J1 --- 3A
J2 --- 3C


A
B
C
1
2
3
AM LOOP ANT
FM ANT (75OHMS)
TM1
SW1
RESET
ANT
ANT
AGC
GND
CNTL
VCC
IF
GND
OSC
FRONT END UNIT
FE391U13
AKAI
C1002B5210-40
LA1245
LA1231N
LA3390
TC9125BP
TD6102P
STEREO SEPARATION
MPX 19KHz
VR1
VR2
L-IN R-IN
FL3
L-OUT R-OUT
TUNER PCB C1002B5240
MAIN AMP P.C.B. J2
+15V
GND
+30V
L CH
GND
R CH
STEREO
TUN
STOP
MUTE
AM9/10K
RESET
FM
MW
LW
To MAIN AMP P.C.B. J3

TR1
2SC3000

TR3
2SC2878

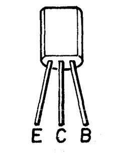
TR2, 4, 5, 6, 17
2SA608K - NP

TR7
2SK246

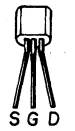
TR9, 11, 12, 13, 14, 16, 18, 20, 22
2SC536K - NP

TR19
2SK223

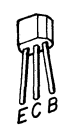
TR21, 24
2SC2603



2SC2878
2SA608K-NP
2SC536K-NP



2SK246

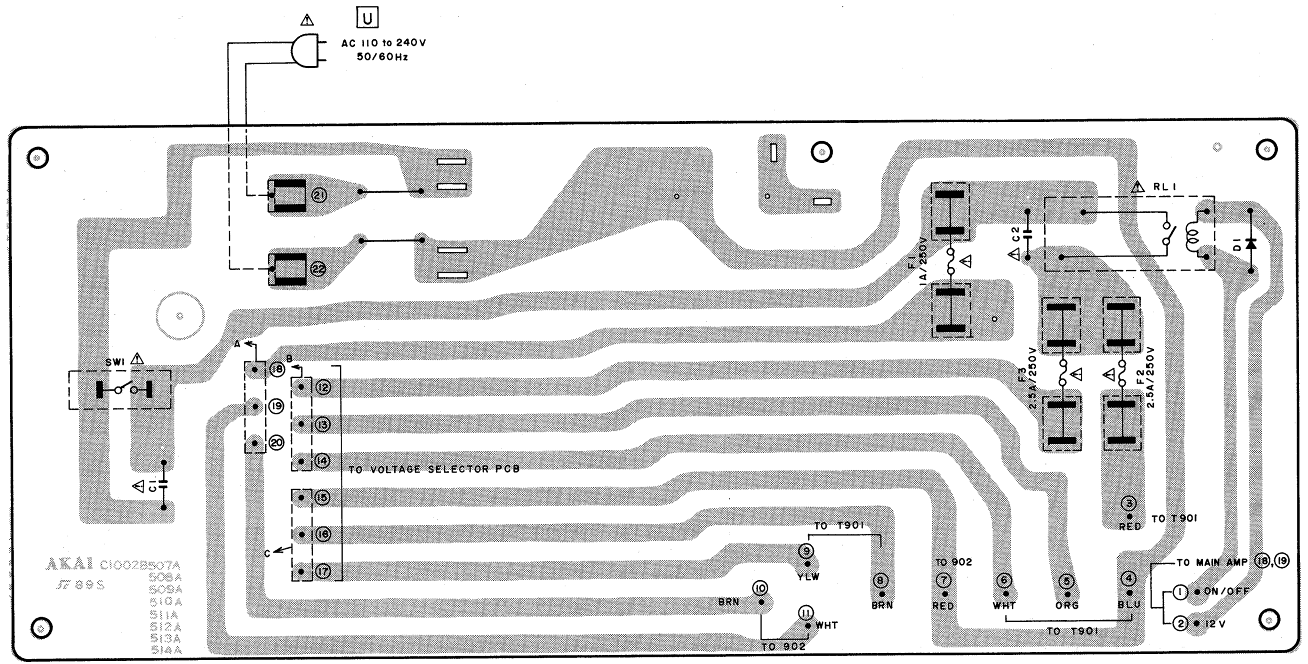


2SC2603

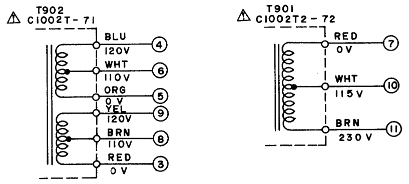
WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

6) POWER SUPPLY P.C BOARD C1002B507A, VOLTAGE SELECTOR P.C BOARD C1002B511B

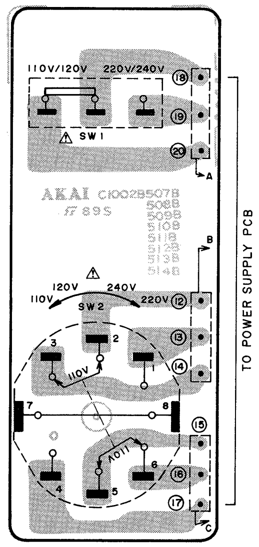

U
AC 110 to 240V
50/60Hz
21
22
SW1
C1
A
B
C
18
19
20
12
13
14
15
16
17
TO VOLTAGE SELECTOR PCB
AKAI C1002B507A
508A
509A
510A
511A
512A
513A
514A
89S
F1
1A/250V
C2
RL1
D1
F3
2.5A/250V
F2
2.5A/250V
3
RED
TO T901
TO T901
9
YLW
8
BRN
10
BRN
11
WHT
TO 902
TO 902
7
RED
6
WHT
5
ORG
4
BLU
TO T901
TO MAIN AMP 18, 19
1 ON/OFF
2 12V

POWER SUPPLY PCB C1002B507A U


T902
C1002T-71
BLU
120V
4
WHT
110V
6
ORG
0 V
5
YEL
120V
9
BRN
110V
8
RED
0 V
3
T901
C1002T2-72
RED
0 V
7
WHT
115 V
10
BRN
230 V
11

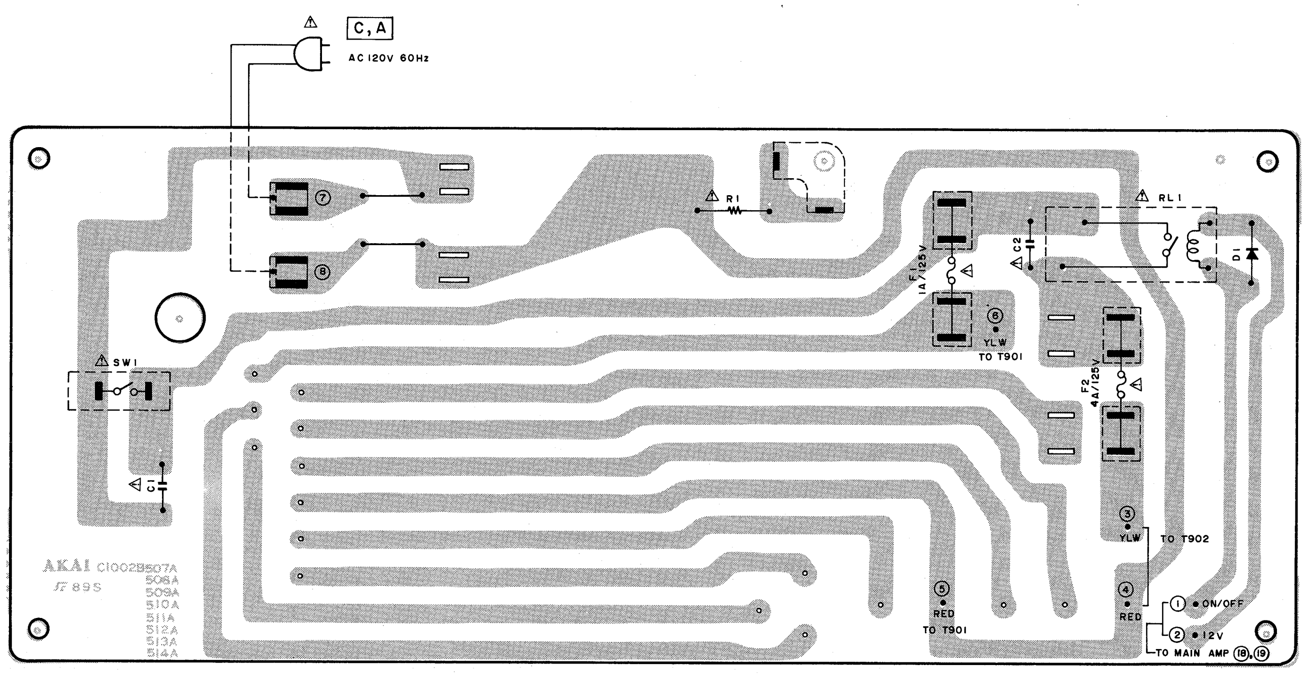
WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY,
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL,
NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

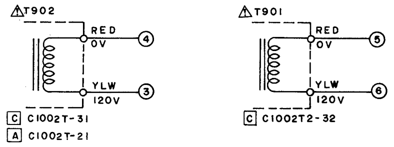

110V/120V
220V/240V
SW1
18
19
20
A
AKAI C1002B507B
508B
509B
510B
511B
512B
513B
514B
89S
B
120V
240V
110V
220V
SW2
12
13
14
3
2
1
110V
7
8
15
16
17
4
5
6
110V
C
TO POWER SUPPLY PCB

VOLTAGE SELECTOR PCB
C1002B511B
ONLY U

7) POWER SUPPLY P.C BOARD C1002B508A


C, A
AC 120V 60Hz
7
8
R1
SW1
C1
F1
1A/125V
C2
RL1
D1
6
YLW
TO T901
F2
4A/125V
3
YLW
TO T902
AKAI C1002B507A
508A
509A
510A
511A
512A
513A
514A
89S
5
RED
TO T901
4
RED
1 ON/OFF
2 12V
TO MAIN AMP 18, 19

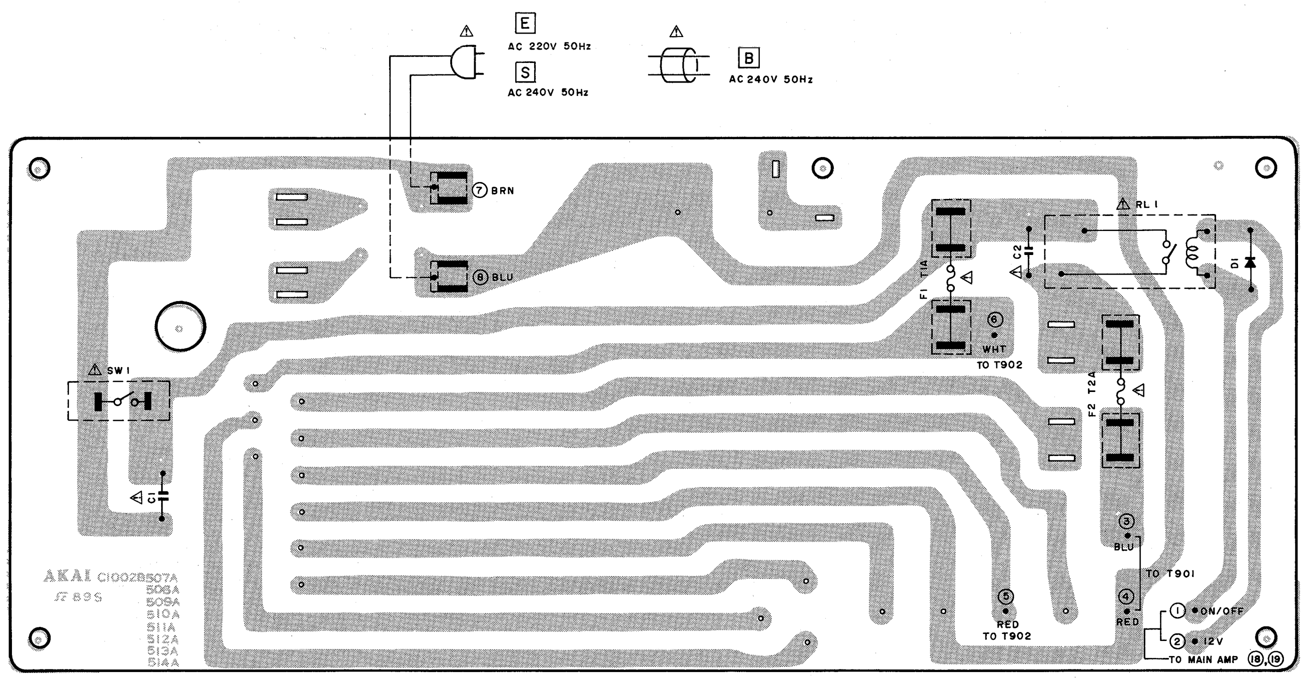
POWER SUPPLY PCB C1002B508A C, A


T902
RED
0V
4
YLW
120V
3
C C1002T-31
A C1002T-21
T901
RED
0V
5
YLW
120V
6
C C1002T2-32

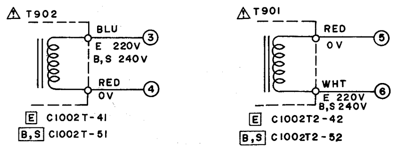
WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY,
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL,
NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

8) POWER SUPPLY P.C BOARD C1002B509A


E
AC 220V 50Hz
S
AC 240V 50Hz
B
AC 240V 50Hz
7 BRN
8 BLU
SW1
C1
F1
T1A
C2
RL1
D1
6
WHT
TO T902
F2
T2A
3
BLU
TO T901
AKAI C1002B507A
508A
509A
510A
511A
512A
513A
514A
89S
5
RED
TO T902
4
RED
1 ON/OFF
2 12V
TO MAIN AMP 18, 19

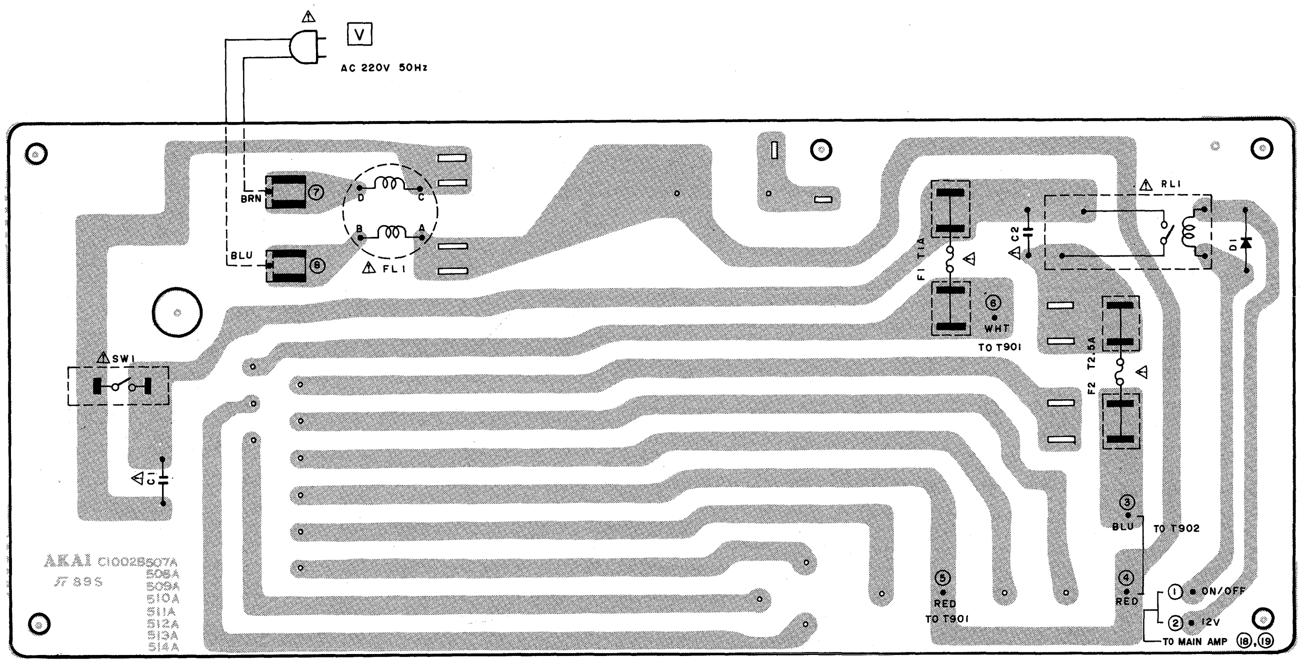
POWER SUPPLY PCB C1002B509A E, B, S


T902
BLU
E 220V
B, S 240V
3
RED
0V
4
E C1002T-41
B, S C1002T-51
T901
RED
0 V
5
WHT
E 220V
B, S 240V
6
E C1002T2-42
B, S C1002T2-52

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY,
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS

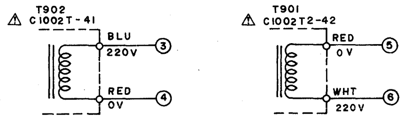
AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL,
NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

9) POWER SUPPLY P.C BOARD C1002B510A



⚠ V
AC 220V 50Hz
BRN ⑦
BLU ⑥
⚠ FL1
⚠ SW1
C1
F1 T1A
F2 T2.5A
C2
⚠ RL1
D1
⑥ WHT TO T901
③ BLU TO T902
⑤ RED TO T901
④ RED
① ON/OFF
② 12V
TO MAIN AMP ⑱,⑲
AKAI C1002B507A 508A 509A 510A 511A 512A 513A 514A

POWER SUPPLY PCB C1002B510A V

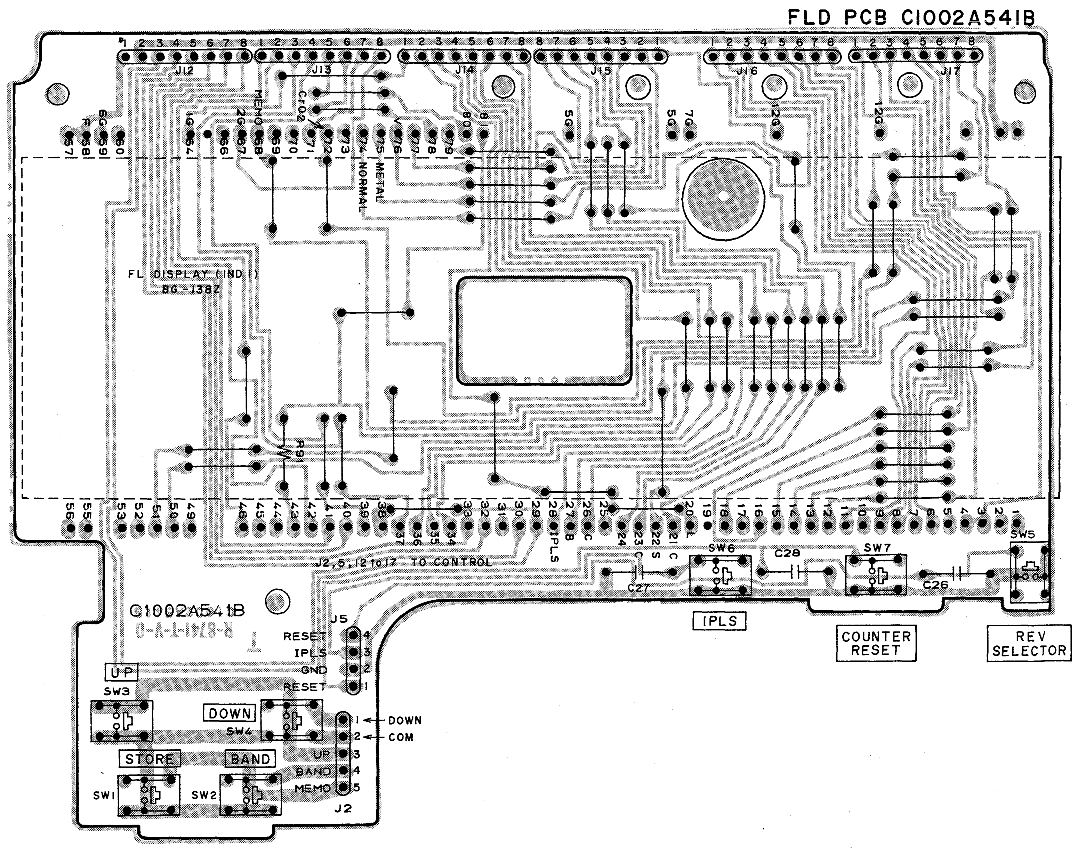


T902
⚠ C1002T-41
BLU 220V ③
RED 0V ④
T901
⚠ C1002T2-42
RED 0V ⑤
WHT 220V ⑥

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

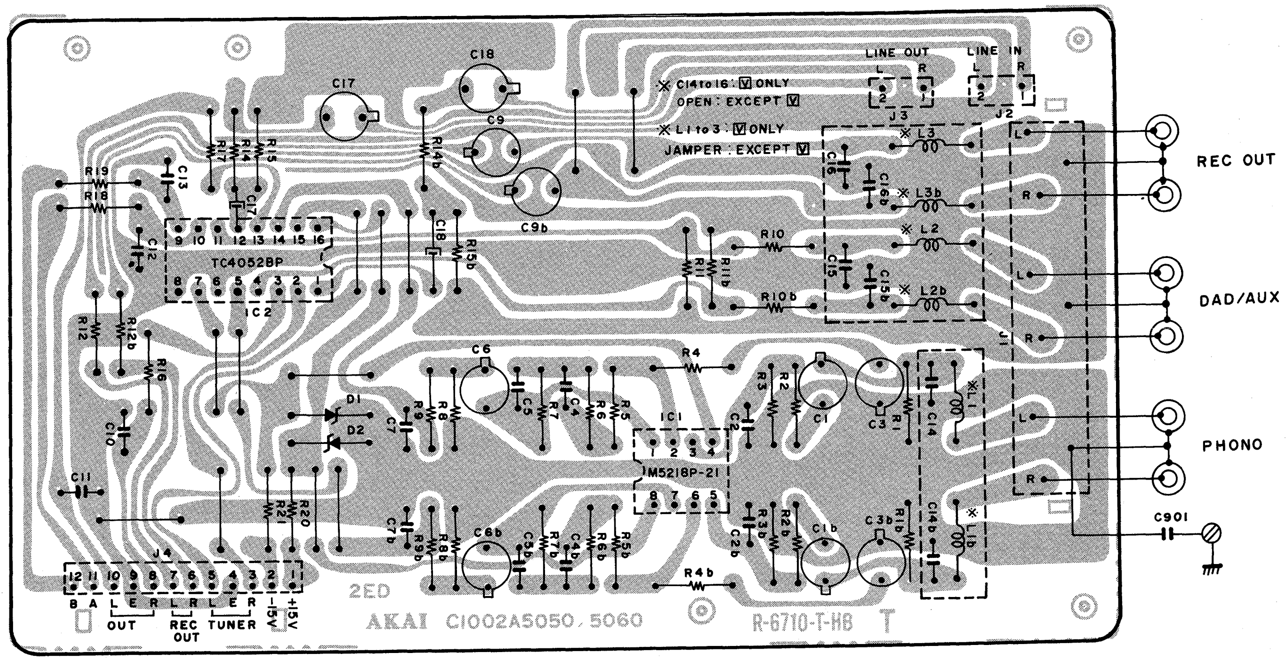
AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

10) FLD P.C BOARD C1002A541B



FLD PCB C1002A541B
J12
J13
J14
J15
J16
J17
FL DISPLAY (IND1) BG-138Z
R191
12, 5, 12 to 17 TO CONTROL
SW5
SW6
SW7
C26
C27
C28
IPLS
COUNTER RESET
REV SELECTOR
C1002A541B
R-8741-T-V-O
J5
RESET
IPLS
GND
RESET
UP
SW3
DOWN
SW4
STORE
BAND
SW1
SW2
DOWN
COM
UP
BAND
MEMO
J2

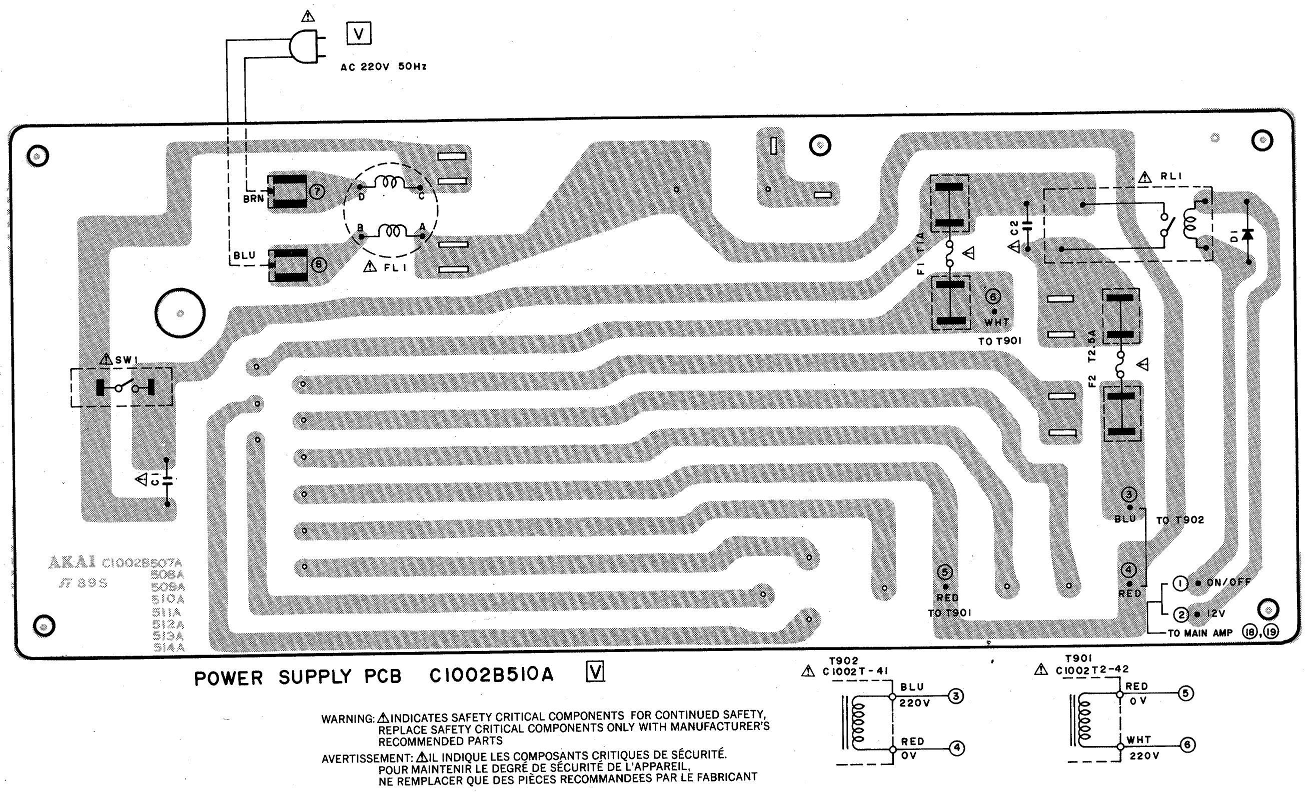
11) FUNCTION P.C BOARD C1002A5050 and C1002A5060



LINE OUT
LINE IN
※ C14 to 16 : V ONLY
OPEN : EXCEPT V
※ L1 to 3 : V ONLY
JUMPER : EXCEPT V
J3
J2
J1
REC OUT
DAD/AUX
PHONO
C901
TC4052BP
IC2
IC1
M5218P-21
D1
D2
J4
B A L E R L R L E R -15V +15V
OUT
REC OUT
TUNER
2ED
AKAI C1002A5050, 5060
R-6710-T-HB

FUNCTION PCB (2ED)
C1002A5050 U C A E S B
C1002A5060 V

9) POWER SUPPLY P.C BOARD C1002B510A

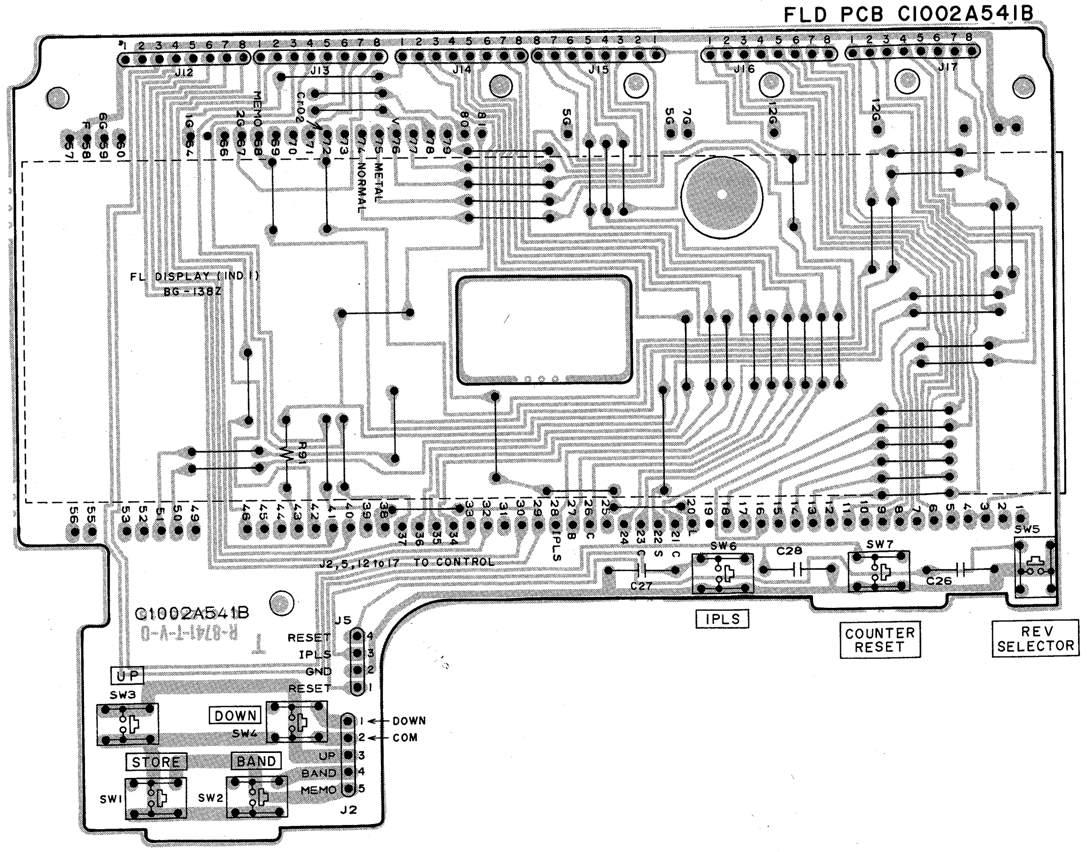

AC 220V 50Hz
BRN
BLU
FL1
SW1
C1
F1 T1A
C2
RL1
D1
WHT
TO T901
F2 T2.5A
BLU
TO T902
RED
TO T901
RED
① ON/OFF
② 12V
TO MAIN AMP ⑱,⑲
AKAI C1002B507A
508A
509A
510A
511A
512A
513A
514A
T902
C1002T-41
BLU
220V
RED
0V
T901
C1002T2-42
RED
0V
WHT
220V

POWER SUPPLY PCB C1002B510A V

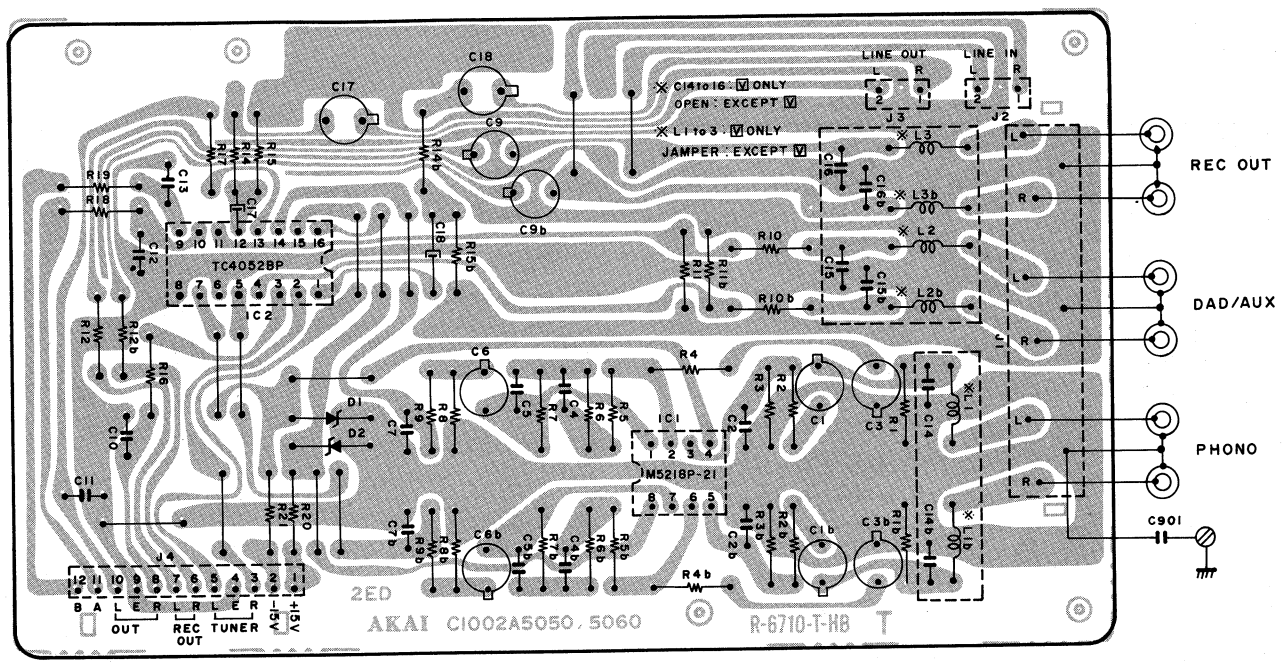
WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

10) FLD P.C BOARD C1002A541B

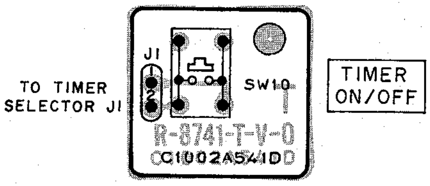

FLD PCB C1002A541B
J12
J13
J14
J15
J16
J17
FL DISPLAY (IND 1)
BG-138Z
R91
J2,5,12 to 17 TO CONTROL
SW5
SW6
SW7
C26
C27
C28
IPLS
COUNTER RESET
REV SELECTOR
C1002A541B
J5
RESET
IPLS
GND
RESET
UP
SW3
DOWN
SW4
STORE
BAND
SW1
SW2
DOWN
COM
UP
BAND
MEMO
J2

11) FUNCTION P.C BOARD C1002A5050 and C1002A5060

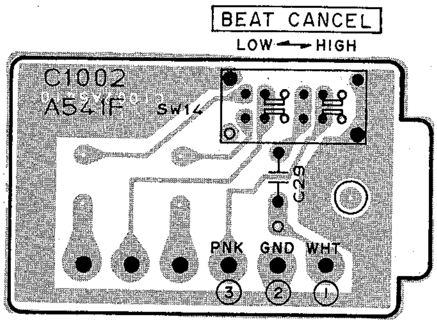

LINE OUT
LINE IN
J3
J2
※ C14 to 16 : V ONLY
OPEN : EXCEPT V
※ L1 to 3 : V ONLY
JAMPER : EXCEPT V
REC OUT
DAD/AUX
PHONO
C901
TC4052BP
IC2
IC1
IM5218P-21
D1
D2
J4
J1
OUT
REC OUT
TUNER
+15V
-15V
2ED
AKAI C1002A5050, 5060
R-6710-T-HB

FUNCTION PCB(2ED)
C1002A5050 U C A E S B
C1002A5060 V

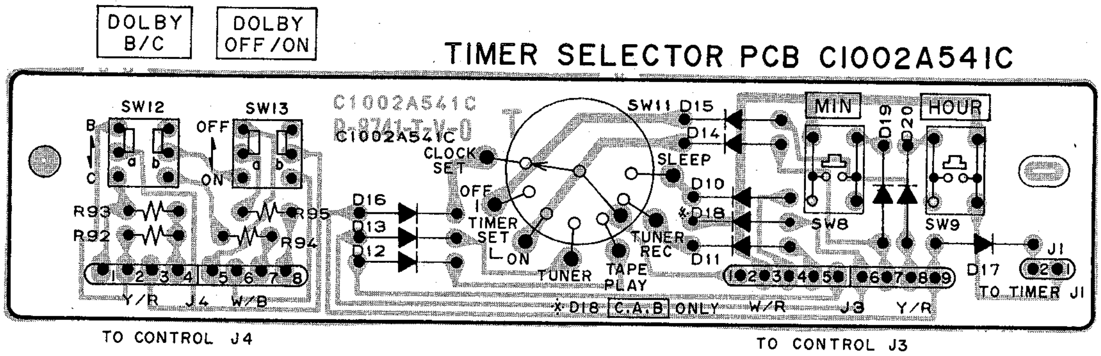
12) OTHER P.C BOARDS


TO TIMER SELECTOR J1
J1
1
2
SW10
TIMER ON/OFF
R-8741-T-V-0
C1002A541D

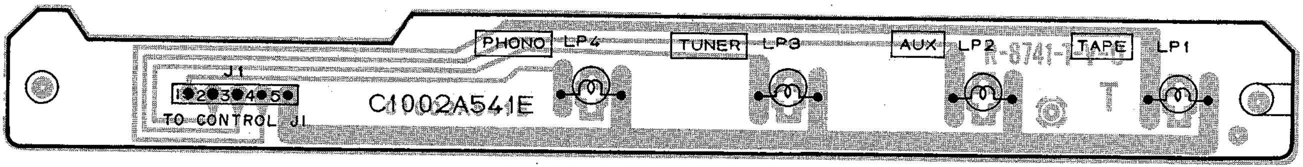
TIMER PCB
C1002A541D


BEAT CANCEL
LOW ⟷ HIGH
C1002
A541F
SW14
C29
PNK
GND
WHT
③
②
①

BEAT CANCEL PCB
C1002A541F

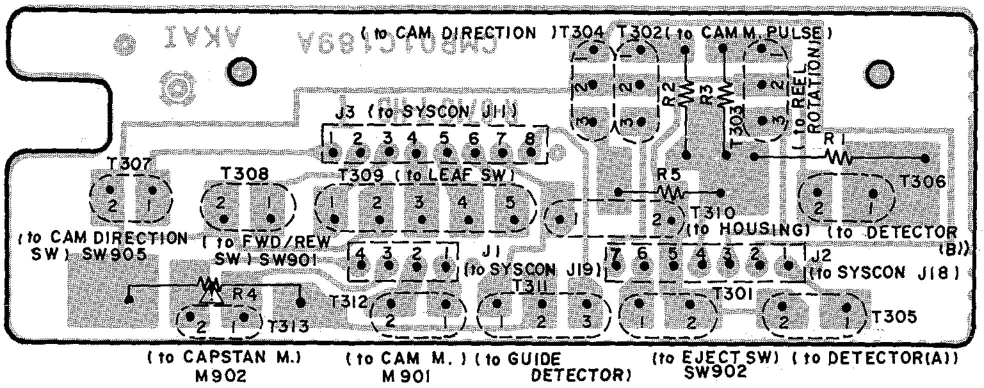

DOLBY B/C
DOLBY OFF/ON
SW12
SW13
B
C
OFF
ON
a
b
C1002A541C
R-8741-T-V-0
C1002A541C
R93
R92
R95
R94
1 2 3 4 5 6 7 8
Y/R
J4
W/B
D16
D13
D12
CLOCK SET
OFF
TIMER SET
ON
TUNER
TAPE PLAY
TUNER REC
SLEEP
SW11
D15
D14
D10
※D18
D11
MIN
HOUR
D19
D20
SW8
SW9
D17
J1
1 2
TO TIMER J1
1 2 3 4 5 6 7 8 9
※D18 C.A.B ONLY
W/R
J3
Y/R
TO CONTROL J4
TO CONTROL J3

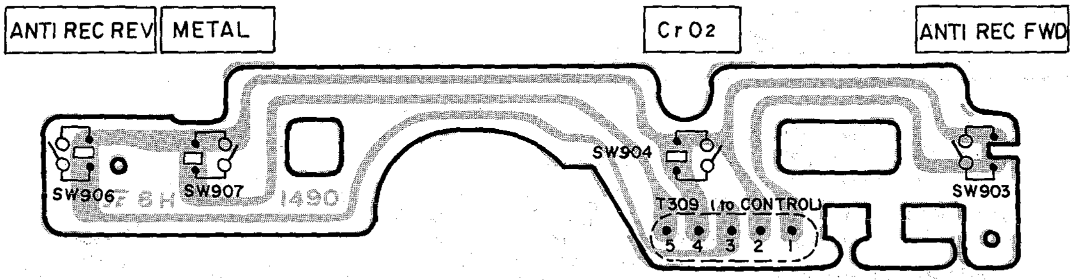
TIMER SELECTOR PCB C1002A541C


PHONO
LP4
TUNER
LP3
AUX
LP2
TAPE
LP1
R-8741-T-V-0
J1
1 2 3 4 5
TO CONTROL J1
C1002A541E

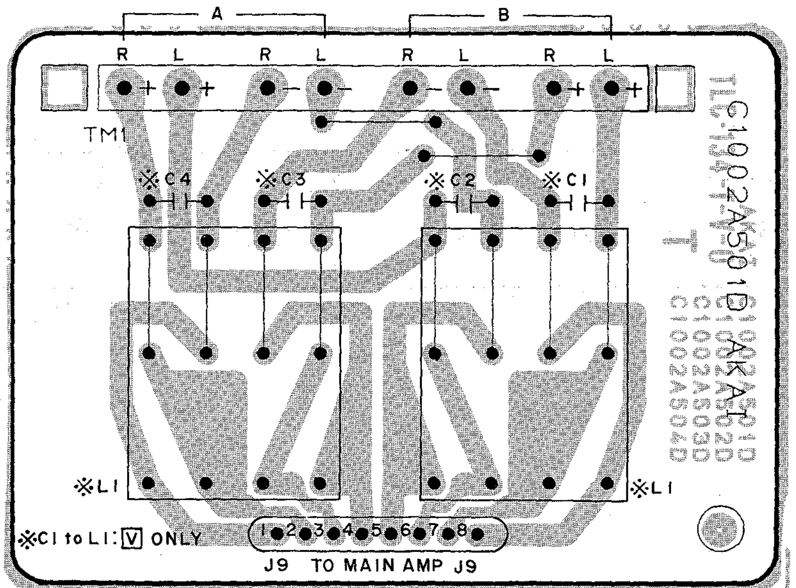
LAMP PCB C1002A541E

CONTROL PCB CMR01C189A

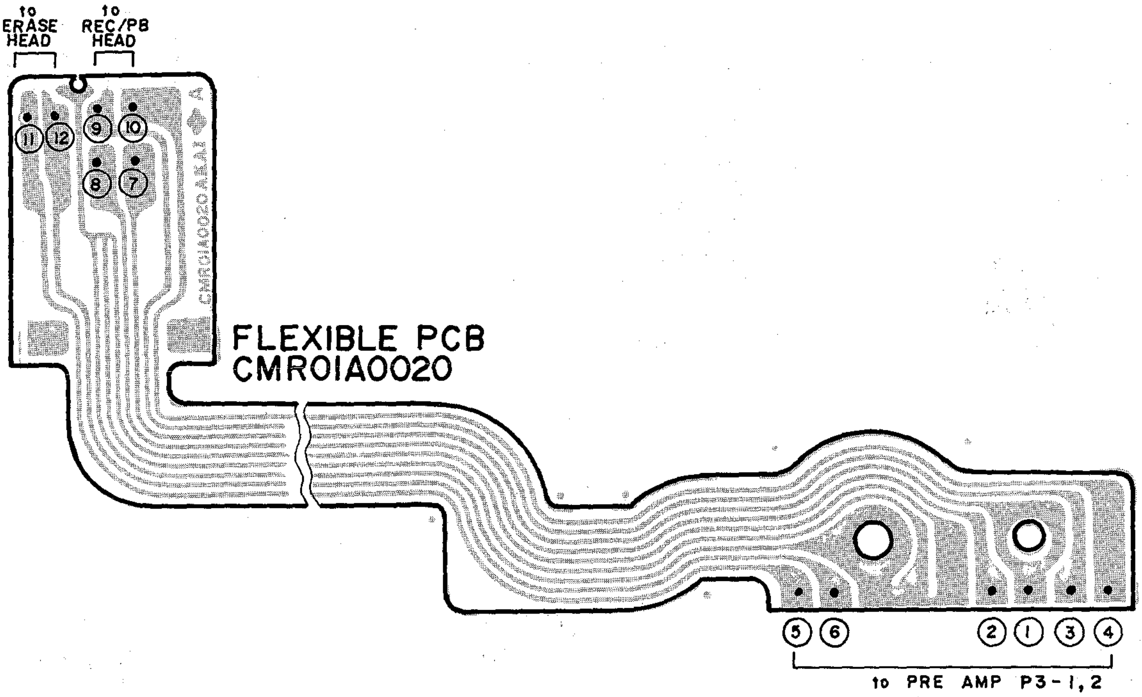

(to CAM DIRECTION)T304
T302(to CAM M. PULSE)
J3 (to SYSCON J11)
1 2 3 4 5 6 7 8
R2
R3
T303 (to REEL ROTATION)
R1
T307
2 1
T308
2 1
T309 (to LEAF SW)
1 2 3 4 5
R5
T310
(to HOUSING)
T306
2 1
(to DETECTOR (B))
(to CAM DIRECTION SW) SW905
(to FWD/REW SW) SW901
4 3 2 1
J1
(to SYSCON J19)
7 6 5 4 3 2 1
J2
(to SYSCON J18)
R4
T313
T312
T311
T301
T305
(to CAPSTAN M.) M902
(to CAM M.) M901
(to GUIDE DETECTOR)
(to EJECT SW) SW902
(to DETECTOR(A))


ANTI REC REV
METAL
CrO2
ANTI REC FWD
SW906
SW907
SW904
SW903
T309 (to CONTROL)
5 4 3 2 1

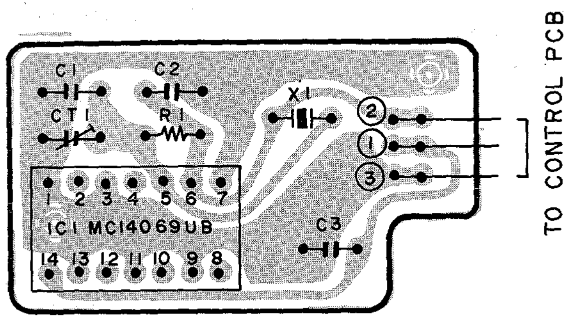
LEAF SWITCH PCB CMR01C1490


A
B
R L R L R L R L
+ + - - - - + +
TM1
※C4
※C3
※C2
※C1
※L1
※L1
※C1 to L1: V ONLY
1 2 3 4 5 6 7 8
J9 TO MAIN AMP J9

SPEAKER PCB C1002A501D U
A502D C,A
A503D E,B,S
A504D V

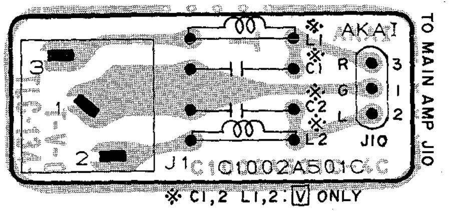

to ERASE HEAD
to REC/PB HEAD
⑪ ⑫ ⑨ ⑩ ⑧ ⑦
CMR01A0020 AKAI
⑤ ⑥ ② ① ③ ④
to PRE AMP P3-1,2

FLEXIBLE PCB
CMR01A0020

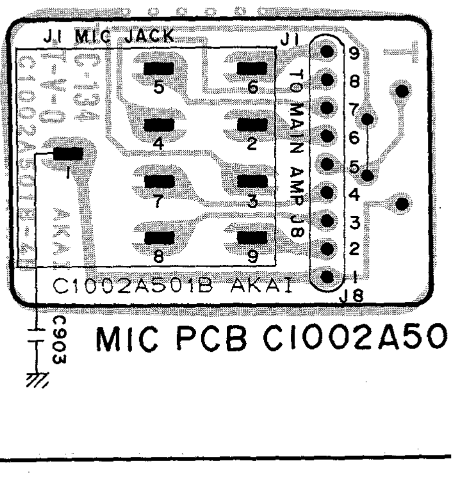

C1
C2
CT1
R1
X1
② ① ③
IC1 MC14069UB
1 2 3 4 5 6 7
14 13 12 11 10 9 8
C3
TO CONTROL PCB

OSC PCB C1002D5450

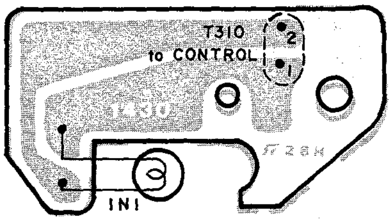
HEAD PHONE PCB C1002A501B U
A502B S,A
A503B E,B,S
A504B V


3
1
2
J1
L1
C1
C2
L2
R
G
L
3
1
2
J10
AKAI
C1002A501C
TO MAIN AMP J10

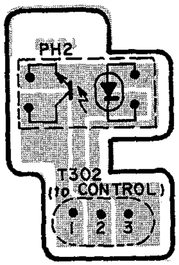
※ C1,2 L1,2: V ONLY


J1 MIC JACK
J1
5 6 4 2 1 7 3 8 9
9 8 7 6 5 4 3 2 1
TO MAIN AMP J8
J8
C1002A501B AKAI
C903

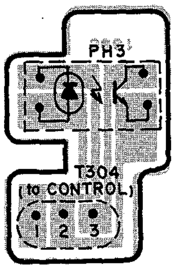
MIC PCB C1002A501C


T310
to CONTROL
2
1
1430
IN1

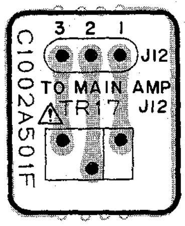
HOUSING PCB
CMR01D1430


PH2
T302
(to CONTROL)
1 2 3

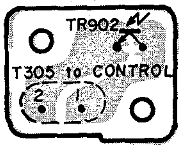
CAM MOTOR
PULSE PCB
CMR01C189B


PH3
T304
(to CONTROL)
1 2 3

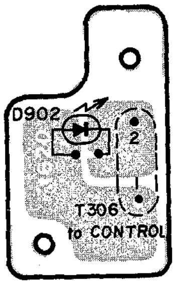
CAM DIRECTION
PCB
CMR01C189C


C1002A501F
3 2 1
J12
TO MAIN AMP
TR17
J12

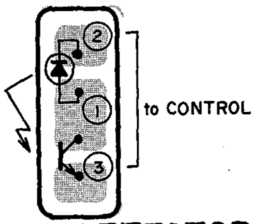
TR PCB C1002A501F


TR902
T305 to CONTROL
2 1

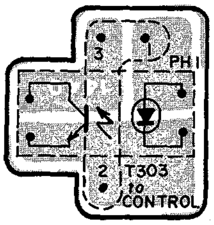
DETECTOR(A) PCB
CMR01D1290


D902
2
T306
to CONTROL

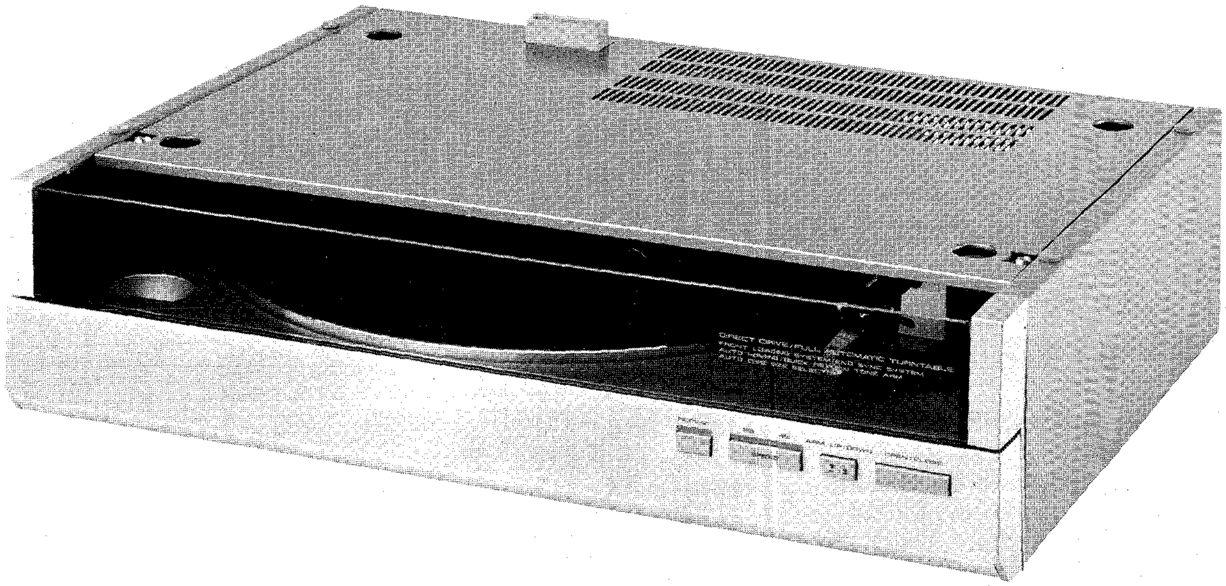
DETECTOR(B) PCB
CMR01D1620


②
①
③
to CONTROL

GUIDE DETECTOR
PCB CMR01D0220


3
1
PH1
2
T303
to
CONTROL

REEL ROTATION
PCB CMR01D1440



SECTION 2

SERVICE MANUAL

MODEL FP-7

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For basic adjustments, measuring methods, and operating principles, refer to GENERAL TECHNICAL MANUAL.

I. SPECIFICATIONS

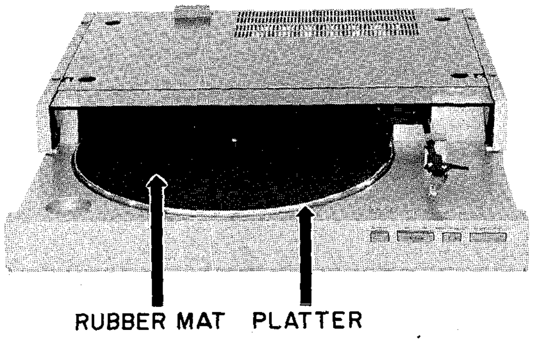
DRIVE SYSTEM & MECHANISM	Direct Drive, Full Automatic, Front Loading system
TURNTABLE (PLATTER)	297 mm Aluminum Alloy Diecast
MOTORS	DC Servo motor x 1 DC motor for Loading system x 1 DC linear motor for Arm system x 1
SPEED	33-1/3 rpm & 45 rpm
WOW & FLUTTER	0.03% (WRMS)
RUMBLE	73 dB (DIN B)
TONEARM	Static Balanced type
EFFECTIVE ARM LENGTH	220 mm
ARM LIFTER	Oil Damped
OVERHANG	17.5 mm
CARTRIDGE	IM type (PC-84)
OUTPUT VOLTAGE	2.8 mV (1 kHz, 5 cm/sec)
CHANNEL SEPARATION	More than 18 dB
OPTIMAL STYLUS PRESSURE	2 g
REPLACEMENT STYLUS	RS-84
POWER REQUIREMENT	±17V DC from models FD-7 or FD-3
DIMENSIONS (W/FD-7)	440(W) x 100(H) x 320(D) mm (17.3 x 3.9 x 12.6 inches)
WEIGHT	8 kg (17.6 lbs)

*** For improvement purposes, specifications and design are subject to change without notice.**

II. DISMANTLING OF UNIT

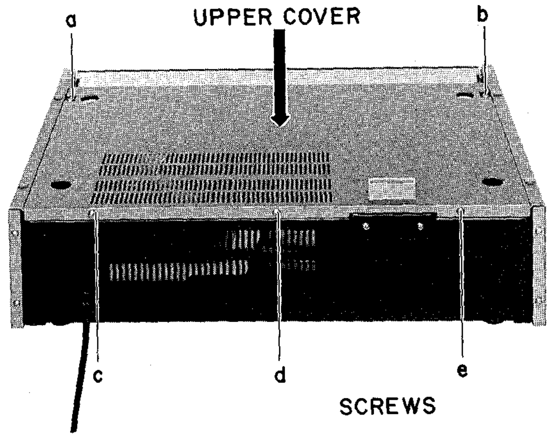
In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the photographs. Reassemble in reverse order.

1

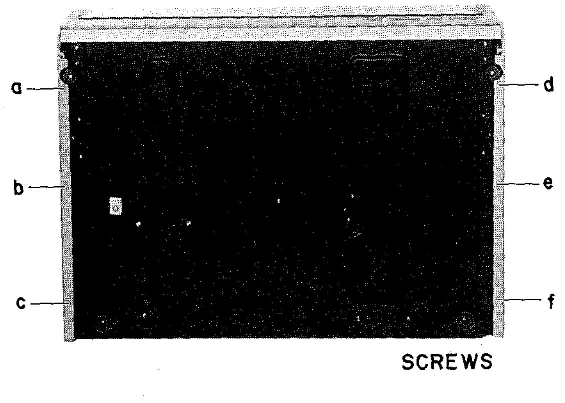

RUBBER MAT
PLATTER

Pll out the cabinet from the case.

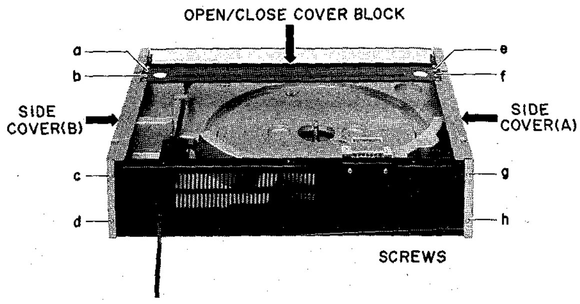
2


a
UPPER COVER
b
c
d
e
SCREWS

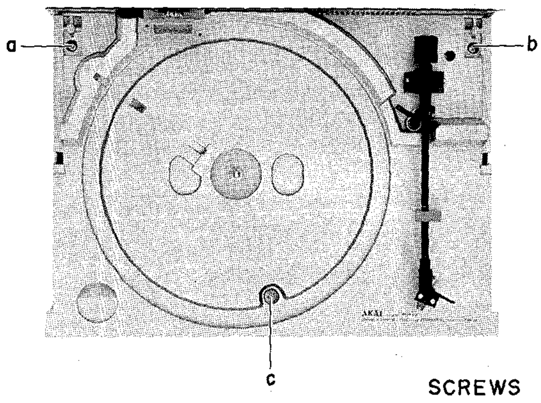
3


a
b
c
d
e
f
SCREWS

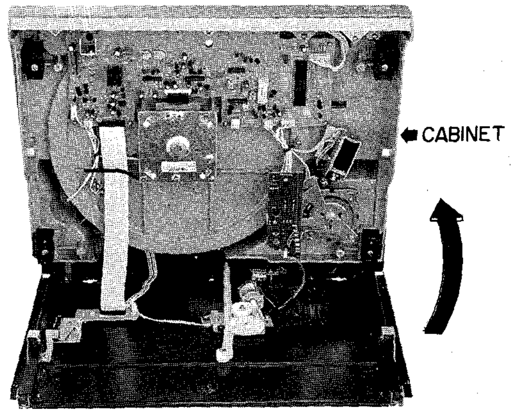
4


OPEN/CLOSE COVER BLOCK
a
b
e
f
SIDE COVER(B)
SIDE COVER(A)
c
d
g
h
SCREWS

5



6



III. CONTROLS

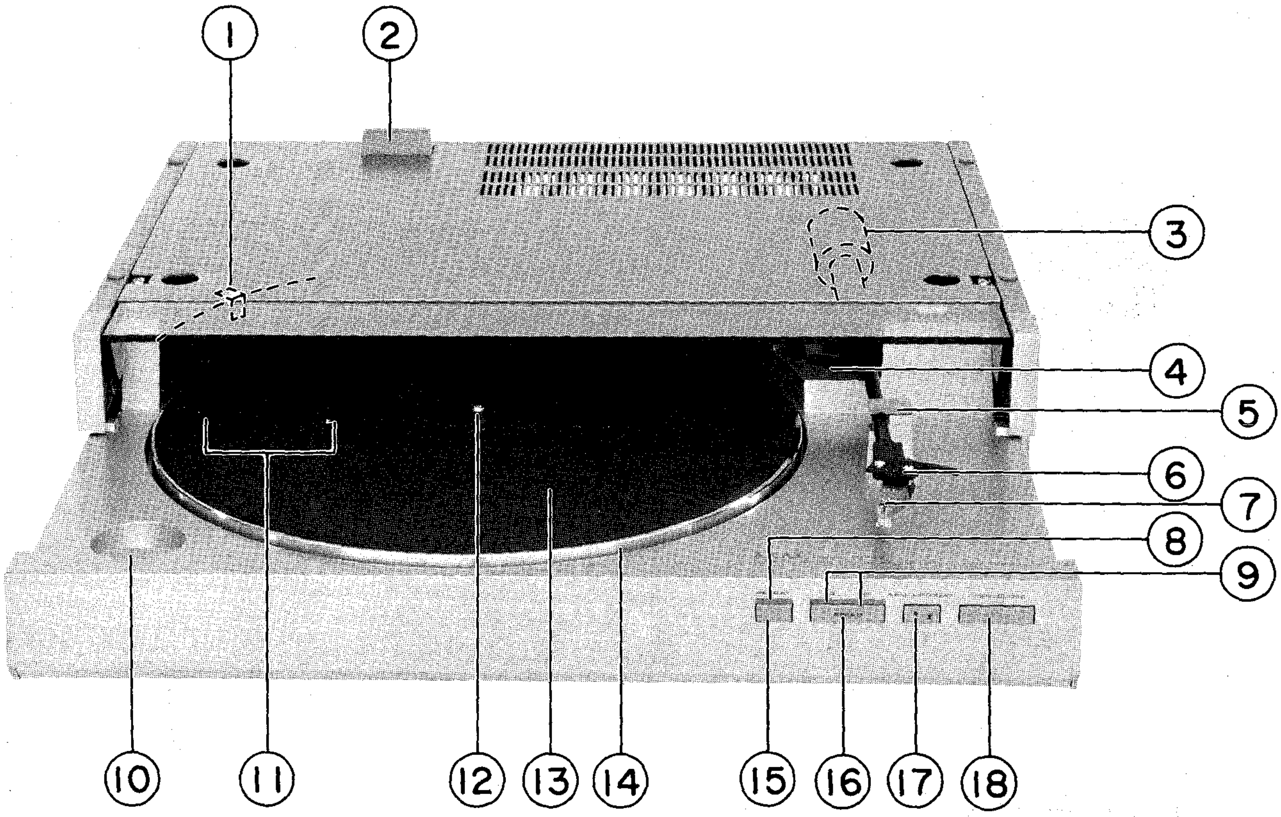


Fig. 3-1

1. SENSOR ILLUMINATOR
2. EXTERNAL POWER CONNECTOR
3. MAIN WEIGHT (FIXED TYPE)
4. TONE ARM LIFTER
5. TONE ARM REST & CLAMP
6. HEAD SHELL
7. CARTRIDGE (PC-84) W/STYLUS (RS-84)
8. REPEAT INDICATOR
9. 33-1/3 / 45 rpm SPEED INDICATORS
10. 45 rpm ADAPTER HOLDER
11. RECORD SENSING HOLES
12. SPINDLE
13. RUBBER MAT
14. PLATTER
15. REPEAT BUTTON
16. SPEED SELECTOR BUTTON
17. ARM UP/DOWN BUTTON
18. OPEN/CLOSE BUTTON

IV. PRINCIPAL PARTS LOCATION

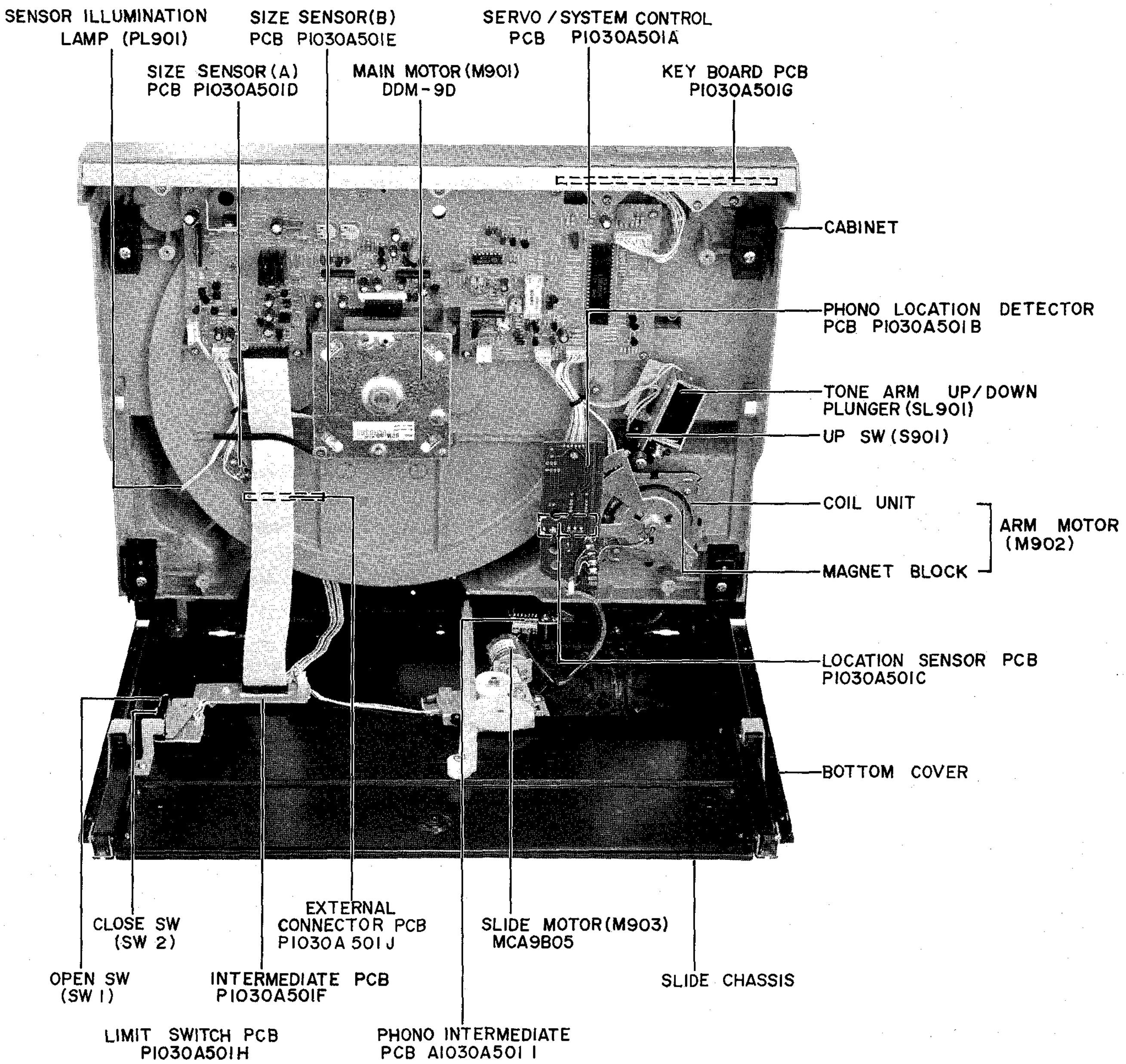

SENSOR ILLUMINATION LAMP (PL901)
SIZE SENSOR(B) PCB P1030A501E
SERVO / SYSTEM CONTROL PCB P1030A501A
SIZE SENSOR (A) PCB P1030A501D
MAIN MOTOR (M901) DDM-9D
KEY BOARD PCB P1030A501G
CABINET
PHONO LOCATION DETECTOR PCB P1030A501B
TONE ARM UP/DOWN PLUNGER (SL901)
UP SW (S901)
COIL UNIT
ARM MOTOR (M902)
MAGNET BLOCK
LOCATION SENSOR PCB P1030A501C
BOTTOM COVER
EXTERNAL CONNECTOR PCB P1030A 501 J
CLOSE SW (SW 2)
SLIDE MOTOR (M903) MCA9B05
OPEN SW (SW 1)
INTERMEDIATE PCB P1030A501F
SLIDE CHASSIS
LIMIT SWITCH PCB P1030A501H
PHONO INTERMEDIATE PCB A1030A501 I

Fig. 4-1 Inside View

V. MECHANICAL ADJUSTMENT

5-1 TONE ARM HEIGHT ADJUSTMENT (Refer to Figs. 5-1 & 5-2)

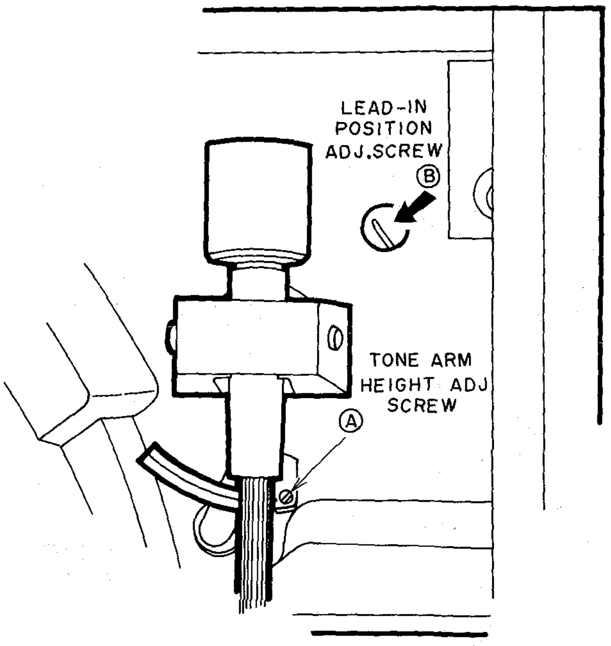

LEAD-IN POSITION ADJ.SCREW
Ⓑ
TONE ARM HEIGHT ADJ SCREW
Ⓐ

Fig. 5-1

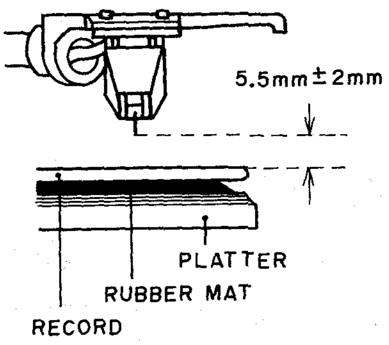

5.5mm±2mm
PLATTER
RUBBER MAT
RECORD

Fig. 5-2 Tone Arm Height Adjustment

1) Take off the Upper Cover by loosening five screws.
2) Turn on the power and open the cabinet.
3) Place a 30 cm record on the platter and bring the Tone Arm above the record.
4) Adjust the Tone Arm Height by turning the screw Ⓐ so that the distance between the tip of the stylus and the record is 5.5 mm ± 2 mm.

5-2 LEAD-IN/LEAD-OUT POSITION ADJUSTMENT (Refer to Fig. 5-1)

1) Use a 17 cm record for this adjustment.
2) Play a record in AUTO mode and confirm that the stylus desends onto the proper Lead-in position.
3) If it is improper, the proper Lead-in position can be obtained by turning the Lead-in Position Adjustment Screw Ⓑ clockwise (to make the Tone Arm drops later) or counter-clockwise (to make the Tone Arm drops sooner) with a screwdriver.

NOTE: Adjusting the proper Lead-in position will automatically adjust the proper Lead-out position.

5-3 CABINET OPEN/CLOSE SLIDE ADJUSTMENT (Refer to Fig. 5-3)

1) Loosen the screw Ⓐ and adjust the position of LIMIT SW BLOCK by sliding it so that the Mask Cover closes completely at CLOSE mode, and opens all the way at OPEN mode.
2) Tighten the screw Ⓐ and apply paint-lock after the adjustment.

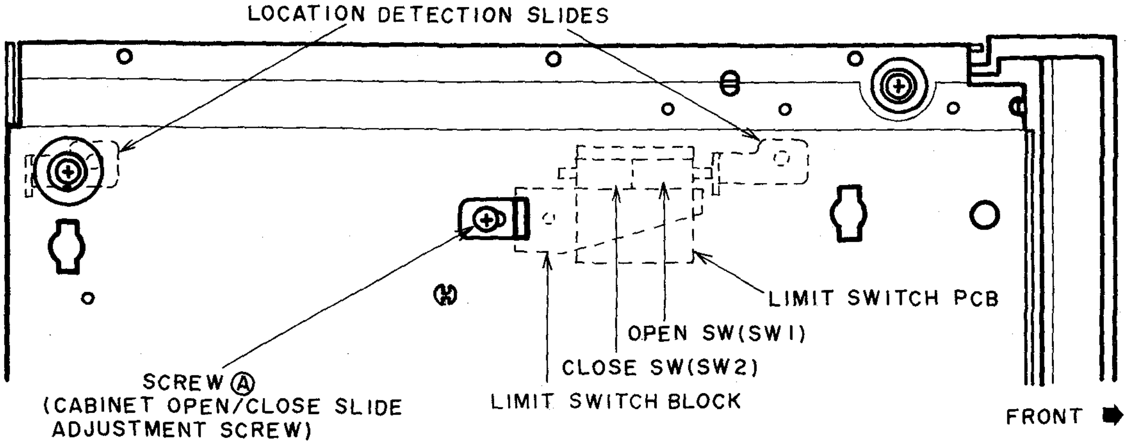

LOCATION DETECTION SLIDES
LIMIT SWITCH PCB
OPEN SW(SW1)
CLOSE SW(SW2)
LIMIT SWITCH BLOCK
SCREW Ⓐ
(CABINET OPEN/CLOSE SLIDE ADJUSTMENT SCREW)
FRONT ➧

Fig. 5-3 Bottom View

VI. ELECTRICAL ADJUSTMENT

6-1 SERVO/SYSTEM CONTROL P.C BOARD ADJUSTMENT POINTS

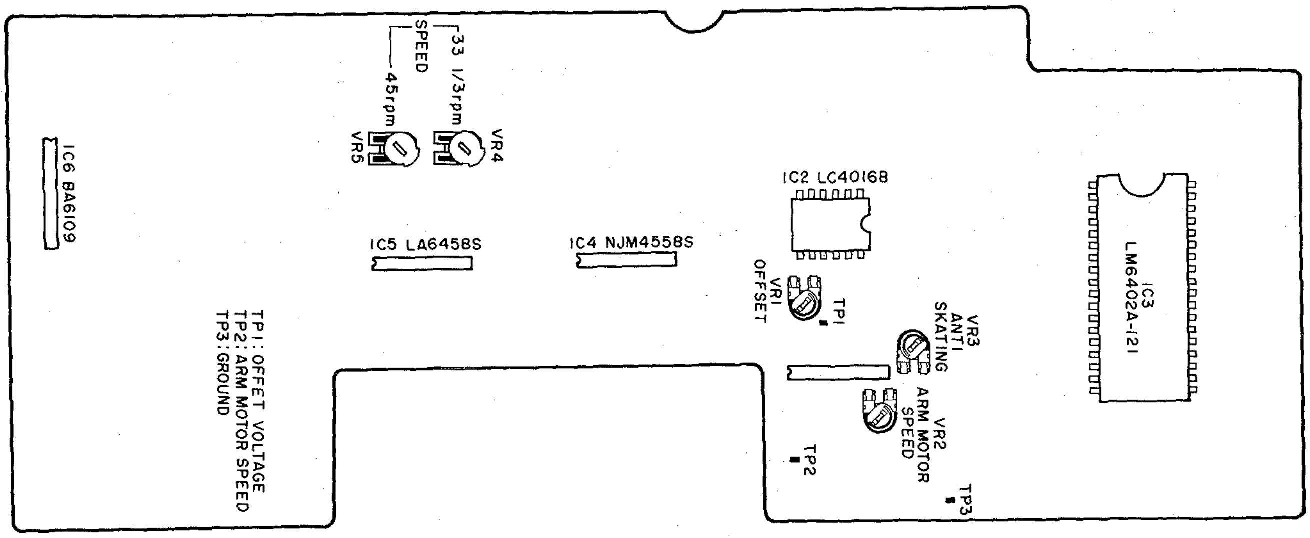

33 1/3rpm
SPEED
45rpm
VR4
VR5
IC6 BA6109
IC5 LA6458S
IC4 NJM4558S
IC2 LC40168
IC3 LM6402A-121
VR1 OFFSET
TP1
VR3 ANTI SKATING
VR2 ARM MOTOR SPEED
TP2
TP3
TP1: OFFSET VOLTAGE
TP2: ARM MOTOR SPEED
TP3: GROUND

Fig. 6-1 Servo/System Control P.C Board Adjustment Points

6-2 MAIN MOTOR SPEED ADJUSTMENT (Refer to Fig. 6-1)

1) Turn on the power and depress the OPEN/CLOSE button to open.
2) Set the Speed Selector to 33 1/3 rpm.
3) Bring the Tone Arm above the record by hand and play a Test Record (33 1/3 rpm, 1,000 Hz).
4) Adjust VR4 (3K) so that the speed is 1,000 Hz ± 5 Hz.
5) Set the Speed Selector to 45 rpm.
6) Play a Test Record (45 rpm, 1,000 Hz).
7) Adjust VR5 (20K) so that the speed is 1,000 Hz ± 5 Hz.

NOTES: 1. When using a strobo plate, adjust VR4 and VR5 so that the strobo for your area stays still.

2. Only this adjustment in electrical adjustments can be accomplished through the holes on the slide chassis without dismantling the unit.

6-3 ARM MOTOR OFF-SET VOLTAGE (Refer to Fig. 6-1)

1) Lock the Tone Arm in rest and clamp position.
2) Connect a digital voltmeter (DC 20V RANGE) to TP1 (IC1 pin ⑧).
3) Adjust VR1 (100K) so that the meter reads 0V ± 50 mV.

6-4 ARM MOTOR SPEED ADJUSTMENT (Refer to Fig. 6-1)

1) Lock the Tone Arm in rest and clamp position.
2) Connect a digital voltmeter to TP2.
3) Turn on the power and depress the PHONO (START/CUT) button twice to obtain the CUT operation mode.
4) Adjust VR2 (30K) so that the meter reads +6 V ± 0.1 V during this CUT operation mode.

NOTE: Be careful that this voltage can be read only for a few seconds.

6-5 ANTI SKATING ADJUSTMENT (Refer to Fig. 6-1)

1) Turn on the power and open the cabinet.
2) Turn off the power and connect a digital voltmeter to TP2.
3) Turn on the power and bring the Tone Arm above the record by hand.
4) Depress the ARM UP/DOWN button to be down.
5) Measure the voltage at 3 seconds later the action in item 4), and adjust VR3 (1K) so that the voltage is 0.4V ± 50 mV.

VII. DC RESISTANCE OF VARIOUS COILS

Parts	Name	DC Resistance
RELAY (RL1)	LAB2NS 2NO 5V	200 ohms
PLUNGER SOLENOID (SL901)	TDS-09SL-513 22V	113 ohms ±10%
MOTOR (M901)	DDM-9D	37.5 ohms $^{+7}_{-3}$ %
MOTOR (M902)	COIL UNIT	30 ohms ±10%
MOTOR (M903)	MCA 9B05	45 ohms ±10%

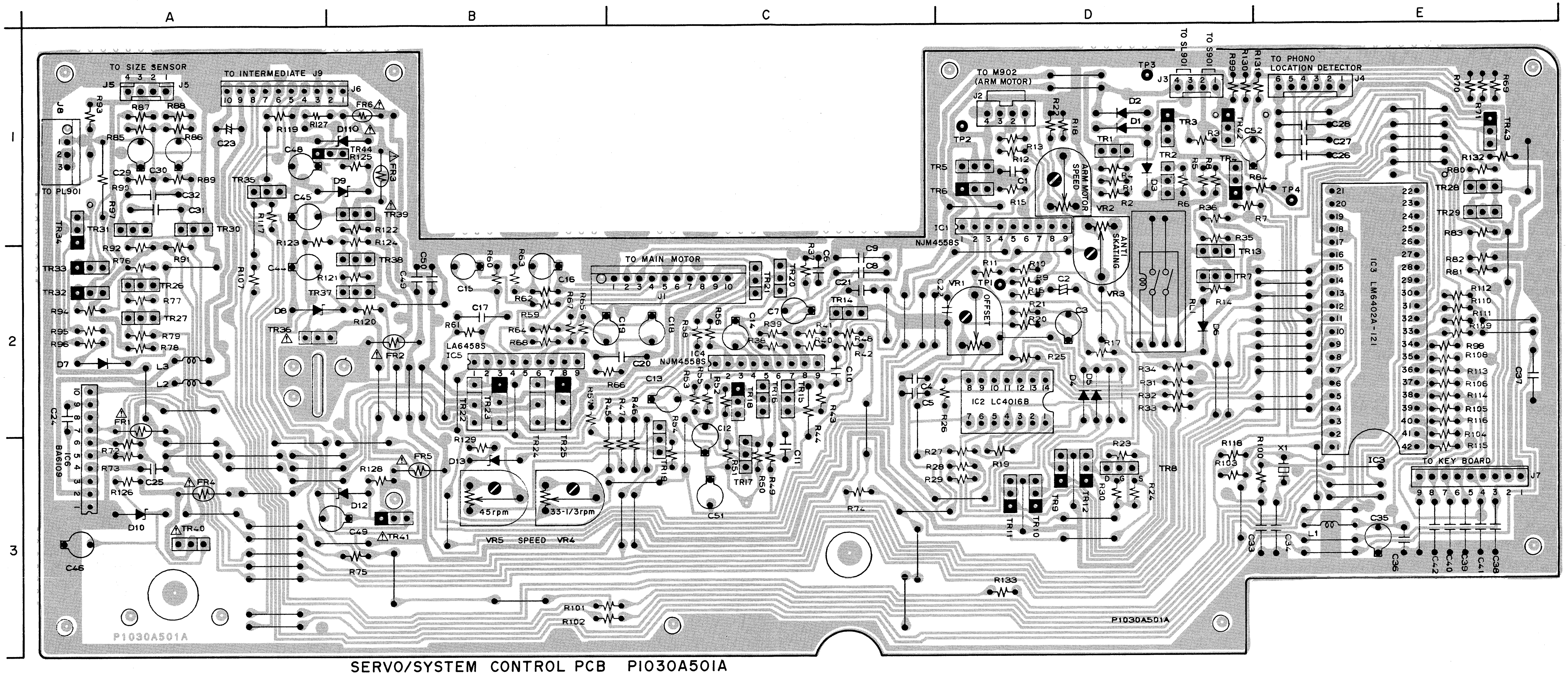
VIII. CLASSIFICATION OF VARIOUS P.C BOARDS

8-1 P.C BOARD TITLES and IDENTIFICATION NUMBERS

P.C Board Title		P.C Board Number
Servo/System Control	P.C Board	P1030A501A
Phono Location Detector	P.C Board	P1030A501B
Location Sensor	P.C Board	P1030A501C
Size Sensor (A)	P.C Board	P1030A501D
Size Sensor (B)	P.C Board	P1030A501E
Intermediate	P.C Board	P1030A501F
Key Board	P.C Board	P1030A501G
Limit Switch	P.C Board	P1030A501H
Phono Intermediate	P.C Board	P1030A501I
External Connector	P.C Board	P1030A501J

8-2 COMPOSITION OF VARIOUS P.C BOARDS

1) SERVO/SYSTEM CONTROL P.C BOARD P1030A501A

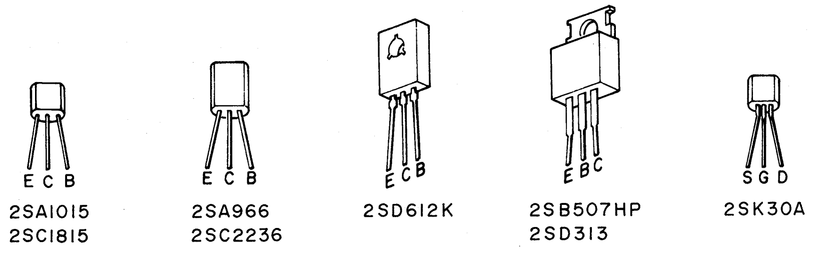

A
B
C
D
E
1
2
3
TO SIZE SENSOR
J5
TO INTERMEDIATE J9
J6
J8
TO PL901
TO MAIN MOTOR
J1
TO M902 (ARM MOTOR)
J2
TP3
J3
TO SL901
TO S901
TO PHONO LOCATION DETECTOR
J4
TP2
TP1
TP4
ARM MOTOR SPEED
VR2
ANTI SKATING
VR3
OFFSET
VR1
RL1
IC1 NJM4558S
IC2 LC4016B
IC3 LM6402A-121
IC4 NJM4558S
LA6458S IC5
BA6109 IC6
45rpm
33-1/3rpm
VR5 SPEED VR4
TO KEY BOARD
J7
X1
L1
L2
L3
P1030A501A

SERVO/SYSTEM CONTROL PCB P1030A501A

LOCATION OF COMPONENTS

TR	
TR1 to 6	D1
TR7	D2
TR8 to 12	D3
TR13	D2
TR14 to 16	C2
TR17	C3
TR18	C2
TR19	C3
TR20,21	C2
TR22 to 25	B2
TR26,27	A2
TR28,29	E1
TR30,31	A1
TR32,33	A2
TR34,35	A1
TR36	A2
TR37,38	B2
TR39	B1
TR40	A3
TR41	B3
TR42	D1
TR43	E1
TR44	B1
IC	
IC1	D1
IC2	D2
IC3	E2
IC4	C2
IC5	B2
IC6	A3
TERMINALS	
J1	C2
J2,3	D1
J4	E1
J5,6	A1
J7	E3
J8	A1

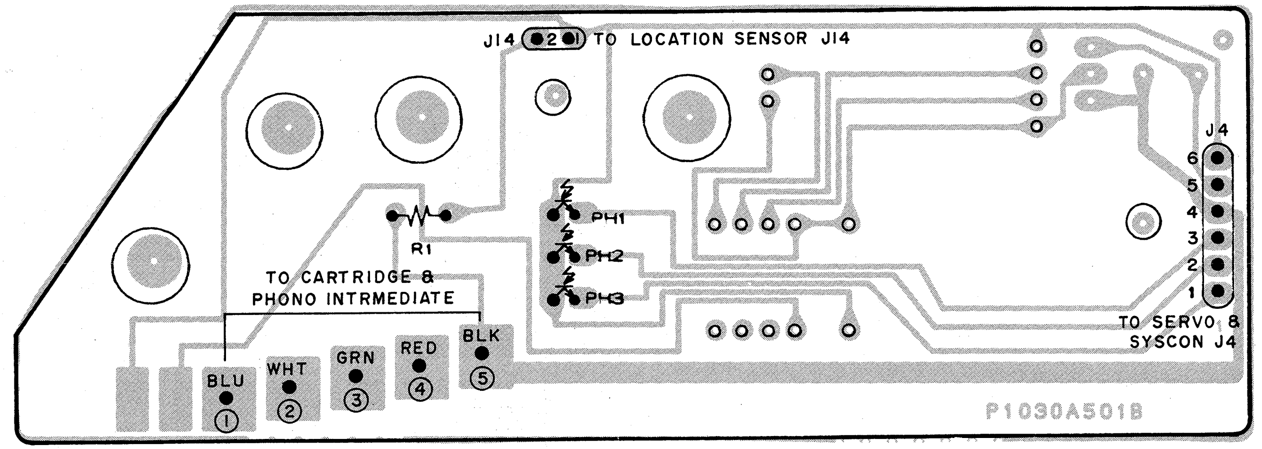
TR1,2,5,22,24	2SC2236(O,Y)
TR3,4,9to12, 18,32to34,42,43	2SA1015(O,Y)
TR6,23,25,44	2SA966(O,Y)
TR7,13to17,19to21, 26to31,35,37,38	2SC1815(Y,GR)
TR8	2SK30A(R)
TR36,40	2SD313(E,F)
TR39	2SD612K(E,F)
TR41	2SB507HP(E,F)


E C B
2SA1015
2SC1815
E C B
2SA966
2SC2236
E C B
2SD612K
E B C
2SB507HP
2SD313
S G D
2SK30A

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY,
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS

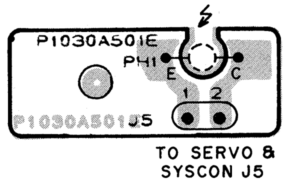
AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL,
NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

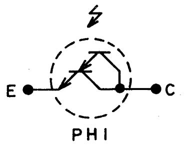
2) OTHER P.C BOARDS


J14
2
1
TO LOCATION SENSOR J14
J4
6
5
4
3
2
1
PH1
PH2
PH3
R1
TO CARTRIDGE &
PHONO INTRMEDIATE
TO SERVO &
SYSCON J4
BLU
①
WHT
②
GRN
③
RED
④
BLK
⑤
P1030A501B

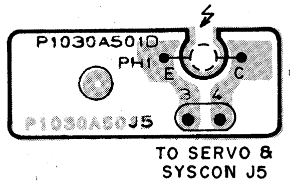
PHONO LOCATION DETECTOR PCB P1030A501B

SIZE SENSOR (B) PCB
P1030A501E

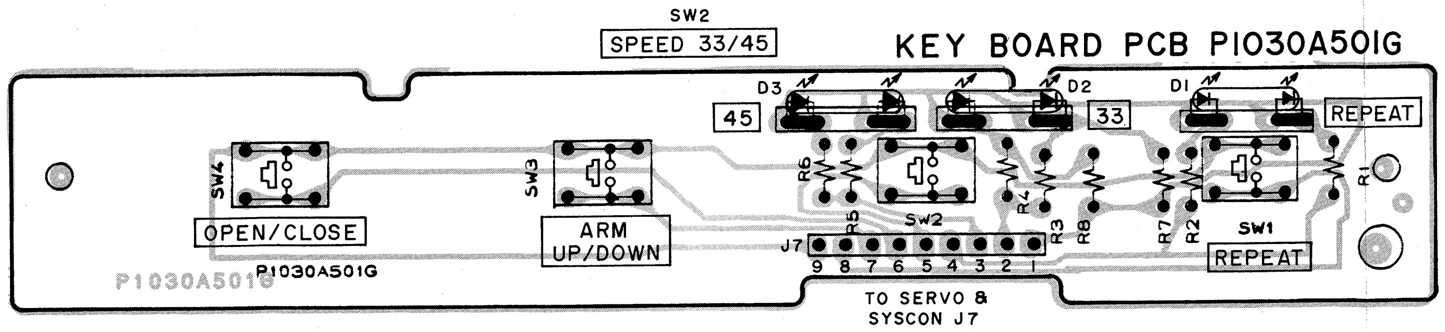

P1030A501E
PH1
E
C
1
2
P1030A501
J5
TO SERVO &
SYSCON J5

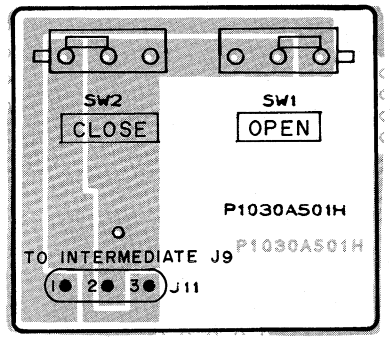


SIZE SENSOR (A) PCB
P1030A501D

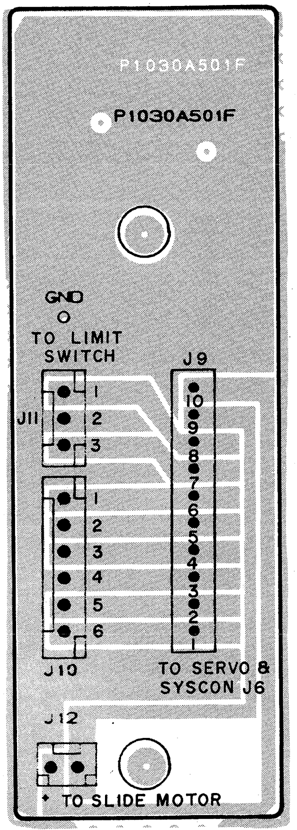

P1030A501D
PH1
E
C
3
4
P1030A50
J5
TO SERVO &
SYSCON J5

KEY BOARD PCB P1030A501G


SW2
SPEED 33/45
D3
D2
D1
45
33
REPEAT
SW4
SW3
OPEN/CLOSE
ARM
UP/DOWN
R6
R5
SW2
R4
R3
R8
R7
R2
R1
SW1
REPEAT
J7
9 8 7 6 5 4 3 2 1
P1030A501G
P1030A501G
TO SERVO &
SYSCON J7

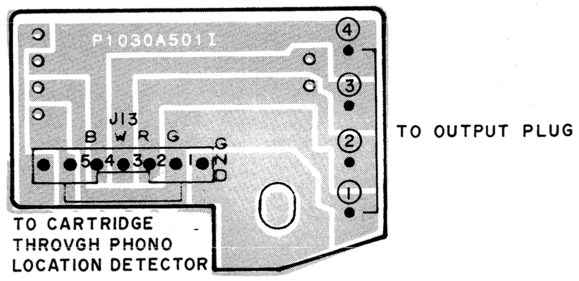

SW2
CLOSE
SW1
OPEN
P1030A501H
P1030A501H
TO INTERMEDIATE J9
1 2 3
J11

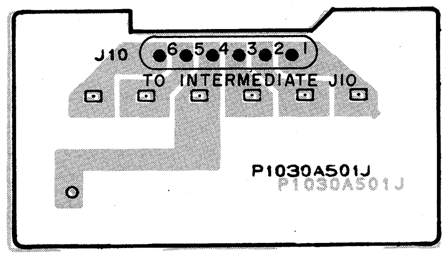
LIMIT SWITCH PCB
P1030A501H


P1030A501F
P1030A501F
GND
TO LIMIT
SWITCH
J9
J11
1
2
3
1
2
3
4
5
6
10
9
8
7
6
5
4
3
2
1
TO EXTERNAL
CONNECTOR
J10
TO SERVO &
SYSCON J6
J12
TO SLIDE MOTOR

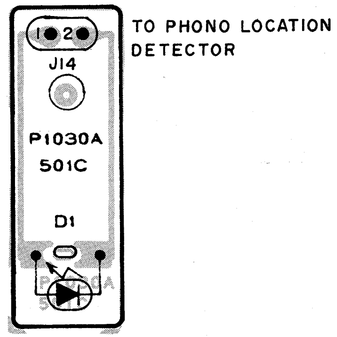
INTERMEDIATE PCB
P1030A501F

PHONO INTERMEDIATE PCB
P1030A501I


P1030A501I
J13
B W R G
5 4 3 2 1 GND
④
③
②
①
TO OUTPUT PLUG
TO CARTRIDGE
THROVGH PHONO
LOCATION DETECTOR


J10
6 5 4 3 2 1
TO INTERMEDIATE J10
P1030A501J
P1030A501J

EXTERNAL CONNECTOR PCB
P1030A501J


1 2
J14
TO PHONO LOCATION
DETECTOR
P1030A
501C
D1

LOCATION SENSOR PCB
P1030A501C

SECTION 3

PARTS LIST

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II. MODEL FP-7

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Resistor and Capacitor which is not listed in this parts list, please refer to COMMON LIST FOR SERVICE PARTS.

ATTENTION

1. When placing an order for parts, be sure to list the parts no. model no., and description. There are instances in which if any of this information is omitted, parts cannot be shipped or the wrong parts will be delivered.
2. Please be careful not to make a mistake in the parts no. If the parts no. is in error, a part different from the one ordered may be delivered.
3. Because parts number and parts unit supply in the Preliminary Parts List may be partially changed, please use this parts list for all future reference.

HOW TO USE THIS PARTS LIST

1. This Parts List shows the parts that are considered necessary for repairs. Other parts, such as resistors and capacitors, are shown in the "Common List for Service Parts". Select and order such parts from the "Common List for Service Parts".
2. The Recommended Spare Parts shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not be supplied in principle.
4. How to read list
   a) Mechanism Block
   b) P.C Board Block

2. HEAD BASE BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
2-1x	BH-T2023A320A	HEAD BASE BLOCK GX-F66R
2-2	HP-H2206A010A	HEAD R/P PR4-8FU C
2-3	ZS-477876	PAN20×03STL CMT
2-4	ZS-536488	BID20×08STL CMT
2-5	ZG-402895	CS ANGLE ADJUST SPRING

SP (Service Parts) Classification

A small "x" indicates the inability to show that particular part in the Photo or Illustration.

This number corresponds with the individual parts index number in that figure

This number corresponds with the Figure Number

6. SYS. CON. P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
6-1	BA-T2034A070A	PC SYS CON BLK GX-F44R
6-IC1	EI-324536	IC HD14049BP
6-IC2	EI-336801	IC MB8841-564M
6-IC3	EI-331661	IC SN7405N
6-IC4	EI-336725	IC M54527P
6-TR1to4	ET-200985	TR 2SC2603 F,G
6-TR5to28	ET-554657	TR 2SA733A P,Q
6-D1	ED-318292	D SILICON H 1S2473T-77 T26
6-D2to4	ED-308952	D GERMA V 1K34A-LR F07
6-D5to10	ED-318292	D SILICON H 1S2473T-77 T26
6-X1	EI-318384	OSC X'TAL NC-18C 3.579545MHZ

SP (Service Parts) Classification

This reference numbers corresponds with symbol numbers of Schematic Diagrams.

5. Both the kind of part and installation position can be determined by the Parts Number. To determine where a parts number is listed, utilize Parts Index at end of Parts List. It is necessary first of all to find the Parts Number. This can be accomplished by using the Reference Number listed at right of parts number in the Parts Index.

WARNING

⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT

⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SURETE. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT.

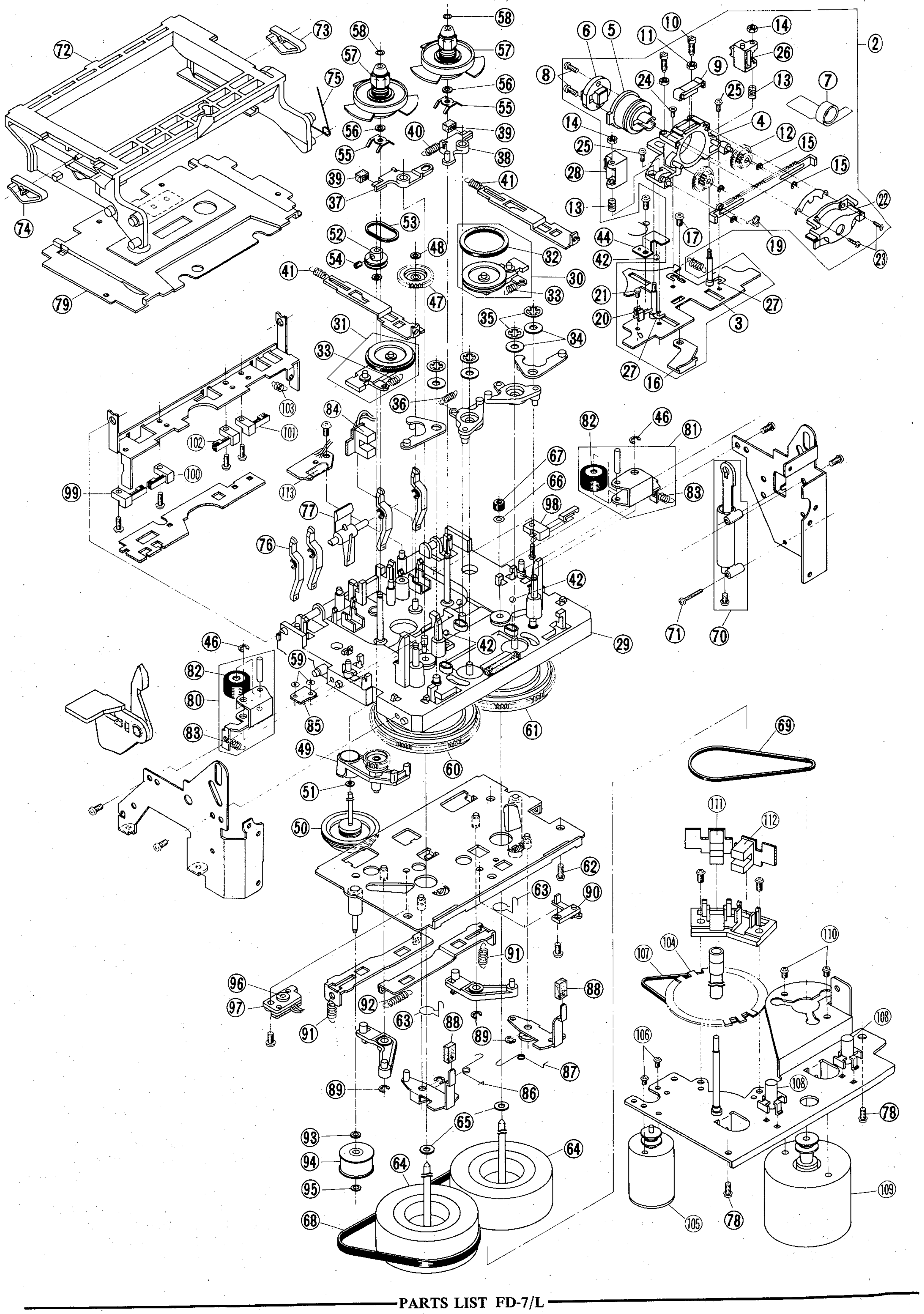
I. MODEL FD-7/L

RECOMMENDED SPARE PARTS

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

NO.	PARTS NO.	DESCRIPTION
1	BF-344029	FLYWHEEL
2	BM-B604491	MOTOR (PULLEY) PART EG-510ED 2B2
3	BM-B604490	MOTOR OPERATION (PULLEY) PART
4	BT-347450	⚠ TRANS POWER C1002T-21 (A)
5	BT-347449	⚠ TRANS POWER C1002T-31 (C)
6	BT-347451	⚠ TRANS POWER C1002T-41 (E,V)
7	BT-347452	⚠ TRANS POWER C1002T-51 (S,B)
8	BT-347448	⚠ TRANS POWER C1002T-71 (U)
9	BT-347466	⚠ TRANS POWER C1002T2-32(C,A)
10	BT-347467	⚠ TRANS POWER C1002T2-42(E,V)
11	BT-347468	⚠ TRANS POWER C1002T2-52(S,B)
12	BT-347465	⚠ TRANS POWER C1002T2-72 (U)
13	BZ-T2045A020D	MECHA CMR01 BLK FD-7
14	EC-330692	C S-FIX H TZ03R200E 4.2-20
15	ED-200749	D SILICON DBA60-K15 400/6.0A
16	ED-324912	D SILICON 1D4B41 200/1.0A
17	ED-224526	D SILICON 10D1 100/1.0A
18	ED-347612	D SILICON 2D4B41
19	ED-346576	D ZENER H HZ24L 1
20	ED-308952	D GERMA V 1K34A-LR F07
21	ED-705414	D LED SE303A INFRARED
22	ED-348990	D SILICON H DS446
23	ED-337153	D SILICON H DS446FA5 F10
24	ED-301911	D SILICON H DS448
25	ED-200469	D SILICON H DS448 FA5 F10
26	ED-344280	D SILICON H GMA-01-FY2 F05
27	ED-337575	D SILICON H GMA-01-4-BT T26
28	ED-348205	D SILICON V MC931 DOUBLE
29	ED-224526	D SILICON 10D1 100/1.0A
30	ED-337605	D VARACTOR SVC333(A) DOUBLE
31	ED-323057	D VARISTER MV12
32	ED-346561	D ZENER H HZ12L C1
33	ED-346564	D ZENER H HZ15L 1
34	ED-330219	D ZENER H HZ20L 2
35	ED-346528	D ZENER H HZ6L C1
36	ED-307690	D ZENER H HZ7L A1
37	ED-325115	D ZENER H 05Z15 X
38	ED-346157	D ZENER H 05Z3.3 Y
39	ED-344153	D ZENER H 05Z30 Y
40	ED-347149	D ZENER H 05Z8.2 Y
41	ED-347963	D ZENER H 1Z6.2
42	ED-348012	D ZENER V HZ3C-1S1
43	ED-338454	D ZENER V HZ9C-2S1
44	EF-668474	⚠ FUSE SEMKO T 250V 0.40A (F6) (E,B,S,V)
45	EF-593706	⚠ FUSE SEMKO T 250V 0.50A (F8) (E,B,S,V)
46	EF-593706	⚠ FUSE SEMKO T 250V 0.50A (F7) (E,B,S,V)
47	EF-623103	⚠ FUSE SEMKO T 250V 1.00A (F1) (E,B,S,V)
48	EF-601301	⚠ FUSE SEMKO T 250V 2.00A (F4) (E,B,S,V)
49	EF-601301	⚠ FUSE SEMKO T 250V 2.00A (F2) (E,B,S,V)
50	EF-601301	⚠ FUSE SEMKO T 250V 2.00A (F5) (E,B,S,V)
51	EF-309389	⚠ FUSE TSC A 250V 0.40A (F6) (U)
52	EF-327103	⚠ FUSE TSC A 250V 0.50A (F7) (U)
53	EF-327103	⚠ FUSE TSC A 250V 0.50A (F8) (U)
54	EF-309387	⚠ FUSE TSC A 250V 1.00A (F1) (U)
55	EF-306950	⚠ FUSE TSC A 250V 2.00A (F4) (U)
56	EF-306950	⚠ FUSE TSC A 250V 2.00A (F5) (U)
57	EF-306951	⚠ FUSE TSC A 250V 2.50A (F2) (U)
58	EF-306951	⚠ FUSE TSC A 250V 2.50A (F3) (U)
59	EF-308848	⚠ FUSE TSC 125V 0.40A (F6) (C,A)
60	EF-309390	⚠ FUSE TSC 125V 0.50A (F8) (C,A)
61	EF-305703	⚠ FUSE TSC 125V 0.63A (F7) (C,A)
62	EF-310229	⚠ FUSE TSC 125V 1.00A (F1) (C,A)
63	EF-306954	⚠ FUSE TSC 125V 2.00A (F5) (C,A)
64	EF-306954	⚠ FUSE TSC 125V 2.00A (F4) (C,A)
65	EF-306957	⚠ FUSE TSC 125V 4.00A (F2) (C,A)
66	EH-749948	FILTER CE CSB455C
67	EI-343390	IC STK1050
68	EI-330352	IC BA6109
69	EI-322248	IC LA1231N
70	EI-202218	IC LA1245
71	EI-343349	IC LA3390
72	EI-336761	IC LA6458S
73	EI-336794	IC LB1240
74	EI-338171	IC LC4069UB
75	EI-337008	IC LC7800
76	EI-348465	IC LM6402H-190
77	EI-337228	IC M5218L0
78	EI-344764	IC M5218P-21
79	EI-332258	IC M54516
80	EI-337835	IC NE652
81	EI-323563	IC STK3042
82	EI-332259	IC TC4052BP
83	EI-346966	IC TC47C20P NH-201
84	EI-346965	IC TC47C21P NH-101
85	EI-315379	IC TC5066BP
86	EI-336717	IC TC9125BP
87	EI-343371	IC TC9154P
88	EI-315381	IC TD6102P
89	EI-330226	IC µPC1373H
90	EI-749983	IC µPD1943G
91	EI-337017	OSC CE CSB800A 0.800000MHZ
92	EI-347434	OSC X'TAL HC-18/U 4.194304MHZ
93	EI-327074	OSC X'TAL HC-18/U 9.000000MHZ
94	EL-348214	PL LEAD 28.0V 24MA
95	EL-347456	PL MINI BASE 14.0V 50MA
96	EM-347435	IND FL BG-138Z DOUBLE
97	EP-337067	RELAY LEAD LAB2NS 2NO 18V
98	EP-347611	RELAY POWER G2R-1112PFD-V 1NO 12V
99	EP-337159	RELAY SIGNAL G4Z-2282P 2NO 24V
100	ER-348873	⚠ R FUSE ERD2FC S10 1/4W
101	ER-326169	⚠ R FUSE ERD2FC S10 1/4W 22R0G
102	ER-337756	⚠ R FUSE ERD2FC S10 1/4W 4700G
103	ER-331188	⚠ R FUSE ERD2FC S10 1/4W 8R2J
104	ER-328520	⚠ R FUSE ERD2FC 1/4W 1000G
105	ER-331619	⚠ R FUSE ERD2FC 1/4W 39R0G
106	ER-337327	FILTER CE BFU459C4N 0.459MHZ (EXCEPT C)
107	ER-337328	FILTER CE BFU460C4N 0.46MHZ(C)
108	ER-338338	FILTER CE MS3GKY-A 10.700MHZ (V,E)
109	ER-336804	FILTER CE SFE10.7MA8 10.7MHZ (EXCEPT V,E)
110	ER-345729	FILTER CE SFE10.7MZ1KA 10.7MHZ (L,E ONLY)
111	ER-343352	FILTER CE SFU459B9 0.459MHZ (EXCEPT C)
112	ER-343353	FILTER CE SFU460B9 0.460MHZ (C)
113	ER-337695	FILTER DB 201AK-005 100KHZ
114	ER-336830	FILTER LC LP BL-34HD (V)
115	ER-341654	FILTER LC LP 42W-1001
116	ER-315407	FILTER CE SFE10.7MMKA 10.7MHZ (EXCEPT L,E)
117	ES-344104	SW LEAF BSW-191 01-1 NO
118	ES-336814	SW LEAF MSW-1150NBK 01-1 NO
119	ES-344253	SW LEAF MSW-1418J 01-1 NO
120	ES-344257	SW LEAF MSW-1418L 01-1 NO
121	ES-347966	SW PUSH ESB-649 91-2-2 N
122	ES-347616	SW PUSH J-K1121#01 2THROW
123	ES-337902	SW PUSH SDLD1P 01-1
124	ES-347436	SW ROTARY SRM1017 1-01-07S
125	ES-347617	SW SELECTOR 0240#02 01-4 (U ONLY)
126	ES-749947	SW SLIDE
127	ES-348463	SW SLIDE X012B11Y 01-2 (U ONLY)
128	ES-344439	SW SLIDE 00420451 2-04-02
129	ES-344445	SW TACT EVQ-QHR12B
130	ES-336780	SW TACK KHH10902
131	ET-301165	TR 2SB631K E,F
132	ET-316171	TR 2SC536K-NP E,F
133	ET-452531	TR 2SD313HP E,F
134	ET-300931	TR 2SD600K E,F
135	ET-310148	TR 2SD612K E,F
136	ET-344102	PHOTO SENSOR GP-1S04
137	ET-330717	PHOTO SENSOR NJL1644L
138	ET-310341	PHOTO SENSOR PT350 T
139	ET-311977	PHOTO SENSOR SPI-201
140	ET-330588	TR FET 2SK19 O,Y
141	ET-336937	TR FET 2SK223 E,F
142	ET-337604	TR FET 2SK246 Y
143	ET-200558	TR 2SA1115 E,F
144	ET-322778	TR 2SA608K-NP E,F,G
145	ET-332311	TR 2SA608SP D,E,F,G
146	ET-305463	TR 2SA970 GR,BL
147	ET-332422	TR 2SB774 Q,R,S
148	ET-337258	TR 2SC1843 E,F
149	ET-302502	TR 2SC2001 K
150	ET-307195	TR 2SC2240 GR,BL
151	ET-309353	TR 2SC2274K E,F
152	ET-328578	TR 2SC2320 E,F
153	ET-344275	TR 2SC2320L F,G
154	ET-330464	TR 2SC2603 D,E
155	ET-200505	TR 2SC2603 E,F
156	ET-200985	TR 2SC2603 F,G
157	ET-308141	TR 2SC2603 G
158	ET-338410	TR 2SC2878 A,B
159	ET-336935	TR 2SC3000 E,F
160	ET-322775	TR 2SC536K-NP E,F,G
161	ET-621235	TR 2SC536NP E,F,G
162	ET-246846	TR 1SC536NP E,F,G,H
163	ET-398788	TR 2SC945L R
164	ET-328437	TR 2SD1012-V F,G
165	ET-328440	TR 2SD863-V8 E,F
166	ET-201580	TR 2SD894
167	EV-315414	R S-FIX H D8 3P 203
168	EV-322413	R S-FIX H D8 3P 302
169	EV-337995	R S-FIX H RVF8P01 3P 103
170	EV-337993	R S-FIX H RVF8P01 3P 203
171	EV-336785	R S-FIX H TM8KV2-1S 3P 0.50W 104
172	EV-347615	VR ROTARY 16P20×3A C104
173	EV-347614	VR ROTARY 16P20×3B C104
174	HR-344103	HEAD COMBO HD425804RVJ
175	MB-344088	BELT CAM
176	MB-344041	BELT CAPSTAN
177	MB-344042	BELT WIND (A)
178	MP-336153	PINCH ROLLER (A)
179	TA-347458	FRONT END FE391U13 88-108MHZ (EXCEPT V)
180	TA-347458	FRONT END FE393E12 88-108MHZ (V)

MECHA CMR01 BLK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1. MECHA CMR01 BLK

REF. NO.	PARTS NO.	DESCRIPTION
1-1	BZ-T2045A020D	MECHA CMR01 BLK FD-7
	HEAD BLOCK	
1-2	BH-T2045A030A	HEAD BLK HX-R5
1-3	MZ-B344008	CHASSIS HEAD PART
1-4	HZ-B344009	HOUSING ROTARY PART
1-5	HZ-B344006	HOLDER ROTARY PART
1-6	HR-344103	HEAD COMBO HD425804RVJ
1-7	EA-343156	PC HEAD FLEXIBLE CMR01A0020
1-8	ZS-245147	CTS20×06STL BNI
1-9	HZ-344011	GUIDE ROTARY HEAD
1-10	ZS-344001	SCREW AZIMUTH
1-11	ZW-272734	N20BRS NI3 1
1-12	MZ-344004	GEAR HEAD
1-13	ZG-344012	SP PUSH GUIDE TAPE
1-14	ZW-618884	N20STL CMT 1
1-15	ZW-391397	RING E120SUP CMT
1-16	MZ-344002	PLATE ADJUST
1-17	ZS-432843	PAN26×04STL CMT
1-18	MZ-344007	RACK
1-19	ZG-344013	SP TORSION RACK
1-20	ES-344104	SW LEAF BSW-191 01-1 NO(SW901)
1-21	ZS-343125	BID14×03STL BNI
1-22	HZ-344015	COVER HOUSING
1-23	ZS-345773	BID17×06STL BNI
1-24	ZS-524812	CTS20×04STL CMT
1-25	ZS-608095	PAN20×05STL CMT
1-26	HZ-344093	GUIDE TAPE
1-27	ZW-344639A	SPACER ADJUST (A) 0.10MM
1-27	ZW-344639B	SPACER ADJUST (B) 0.15MM
1-27	ZW-344639C	SPACER ADJUST (C) 0.20MM
1-27	ZW-344639D	SPACER ADJUST (D) 0.25MM
1-27	ZW-344639E	SPACER ADJUST (E) 0.30MM
1-27	ZW-344639F	SPACER ADJUST (F) 0.35MM
1-27	ZW-344639G	SPACER ADJUST (G) 0.40MM
1-27	ZW-344639H	SPACER ADJUST (H) 0.45MM
1-27	ZW-344639J	SPACER ADJUST (I) 0.50MM
1-28	BZ-T2045A040A	GUIDE DETECTION BLK HX-R5
	MECHA CMR01 BLOCK	
1-29	MZ-B344018	CHASSIS MECHA PART
1-30	MI-344094	IDLER PLAY(R) ASSY
1-31	MI-344095	IDLER PLAY(L) ASSY
1-32	MB-345139	WHEEL RUBBER
1-33	ZG-343195	SP PULL IDLER
1-34	ZW-268222	PW31×080×030STL CMT
1-35	ZW-329422	RING CS0300
1-36	ZG-312923	SP T1-3.2/0.2-11.2 T1-040
1-37	ML-344032	LEVER BRAKE (L)
1-38	ML-344033	LEVER BRAKE (R)
1-39	MB-344034	BRAKE RUBBER
1-40	ZG-312925	SP T1-3.2/0.2-14.0 T1-042
1-41	ZG-349016	SP PULL SLIDE
1-42	MV-666887	STEEL BALL D2.5
1-43	ZG-343193	SP PULL HEAD CHASSIS RETURN
1-44	MZ-344039	PLATE HEAD HOLD
1-45	ZS-336613	PT PAN26×06STL CMT
1-46	ZW-270088	RING E 190SUP CMT
1-47	MZ-344036	GEAR WIND (B)
1-48	ZW-343120	PW17×040×025PSL
1-49	ML-344096	ARM REWIND ASSY
1-50	TC-344097	WIND ASSY
1-51	ZW-305546	PW21×040×025PSL
1-52	MR-344037	PULLEY WIND
1-53	MB-344043	BELT WIND (B)
1-54	ZS-345314	–SET20×03STL CMT HP
1-55	ZG-344031	SP PLATE BT
1-56	ZW-381644	PW21×040×013PSL
1-57	BR-344098	REEL TABLE (A) ASSY
1-58	ZW-343120	PW17×040×025PSL
1-59	ZW-349046	WASHER FIXATION
1-60	MZ-344019	CAM WHEEL (L)
1-61	MZ-344020	CAM WHEEL (R)
1-62	ZS-336613	PT PAN26×06STL CMT
1-63	ZG-344064	SP PULL EARTH
1-64	BF-344029	FLYWHEEL
1-65	ZW-344047	SPACER FLYWHEEL
1-66	ZW-349047	WASHER OIL STOPPER
1-67	MB-344028	PULLEY RUBBER
1-68	MB-344041	BELT CAPSTAN
1-69	MB-344042	BELT WIND (A)
1-70	MZ-344099	DUMPER ASSY
1-71	ZS-343113	ST PAN20×12STL CMT
1-72	SP-344057	LID CASE
1-73	ZG-336615	SP PLATE CASSETTE HOLDER (B)
1-74	ZG-344939	SP PLATE CASSETTE HOLDER
1-75	ZG-344058B	SP TORSION LID (L)
1-76	ML-344286	LEVER DETECTION (A)
1-77	ML-344053	LEVER DETECTION (B)
1-78	ZS-321194	ST PAN26×05STL CMT
1-79	BD-B344049B	LID DECORATION (B) PART
1-80	BL-T2045A050A	ARM PINCH ROLLER (L) BLK HX-R5
1-81	BL-T2045A060A	ARM PINCH ROLLER (R) BLK HX-R5
1-82	MP-336153	PINCH ROLLER (A)
1-83	ZG-344089	SP PULL PINCH ROLLER
1-84	ET-311977	PHOTO SENSOR SPI-201
1-85	ET-310341	PHOTO SENSOR PT350 T
1-86	ZG-345660	SP TORTION RETURN (L)
1-87	ZG-345661	SP TORTION RETURN (R)
1-88	MB-349019	RUBBER ARM RETURN
1-89	ZW-270088	RING 190SUP CMT
1-90	ES-344101	SW LEAF MD-1003 01-1 NO(SW905)
1-91	ZG-344090	SP PULL DRIVE ARM
1-92	ZG-312945	SP T1-3.2/0.29-14.0 T1-061
1-93	ZW-305546	PW21×040×025PSL
1-94	MR-B344076	PULLEY MIDDLE PART
1-95	ZW-343120	PW17×040×025PSL
1-96	ED-310340	D LED GL350 INFRARED RAY (D902)
1-97	TC-344062	HOLDER STOP SENSOR
1-98	ES-336814	SW LEAF MSW-1150NBK 01-1 NO (SW902)
1-99	ES-344257	SW LEAF MSW-1418L 01-1 NO (SW903)
1-100	ES-344253	SW LEAF MSW-1418J 01-1 NO (SW904)
1-101	ES-344257	SW LEAF MSW-1418L 01-1 NO (SW906)
1-102	ES-344253	SW LEAF MSW-1418J 01-1 NO (SW907)
1-103	ZG-344091	SP PULL HOLDER
1-104	MR-344080	PULLEY CAM SLIT
1-105	BM-B604490	MOTOR OPERATION (PULLEY) PART
1-106	ZS-477876	PAN20×03STL CMT
1-107	MB-344088	BELT CAM
1-108	MZ-344083	HOLDER THRUST
1-109	BM-B604491	MOTOR (PULLEY) PART EG-510ED 2B2
1-110	ZS-592378	PAN26×03STL CMT
1-111	ET-344102	PHOTO SENSOR GP-1S04 (PH2)
1-112	ET-344102	PHOTO SENSOR GP-1S04 (PH3)
1-113	EL-348214	PL LEAD 28.0V 24MA (IN1)

2. MAIN AMP P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
2-1U	BA-C1002A070A	PC MAIN BLK FD-7 (U)
2-1C	BA-C1002A070B	PC MAIN BLK FD-7 (C) (C,A)
2-1E	BA-C1002A070C	PC MAIN BLK FD-7 (E)
2-1V	BA-C1002A070D	PC MAIN BLK FD-7 (V)

MAIN AMP P.C BOARD

REF. NO.	PARTS NO.	DESCRIPTION
2-IC1	EI-337228	IC M5218L0
2-IC2	EI-343371	IC TC9154P
2-IC3	EI-323563	IC STK3042
2-IC4	EI-343390	⚠ IC STK1050
2-IC5,6	EI-337228	IC M5218L0
2-TR1	ET-305463	TR 2SA970 GR,BL
2-TR2,3	ET-307195	TR 2SC2240 GR,BL
2-TR4	ET-307195	⚠ TR 2SC2240 GR,BL
2-TR5,6	ET-307195	TR 2SC2240 GR,BL
2-TR7	ET-328440	TR 2SD863-V8 E,F
2-TR8	ET-307195	TR 2SC2240 GR,BL
2-TR9	ET-300931	⚠ TR 2SD600K E,F
2-TR10	ET-301165	⚠ TR 2SB631K E,F
2-TR11	ET-316171	⚠ TR 2SC536K-NP E,F
2-TR12	ET-316171	TR 2SC536K-NP E,F
2-TR13	ET-300931	⚠ TR 2SD600K E,F
2-TR14	ET-452531	⚠ TR 2SD313HP E,F
2-TR15	ET-310148	⚠ TR 2SD612K E,F
2-TR16	ET-301165	⚠ TR 2SB631K E,F
2-TR17	ET-310148	⚠ TR 2SD612K E,F
2-D1,2	ED-346528	D ZENER H HZ6L C1
2-D3,4	ED-301911	D SILICON H DS448
2-D5	ED-346157	D ZENER H 05Z3.3 Y
2-D6,7	ED-337153	D SILICON H DS446FA5 F10
2-D8	ED-348990	D SILICON H DS446
2-D9,10	ED-337153	D SILICON H DS446FA5 F10
2-D11	ED-301911	D SILICON H DS448
2-D12,13	ED-337153	⚠ D SILICON H DS446FA5 F10
2-D14	ED-200749	⚠ D SILICON DBA60-K15 400/6.0A
2-D15,16	ED-346576	⚠ D ZENER H HZ24L 1
2-D17,18	ED-346561	D ZENER H HZ12L C1
2-D19	ED-344153	D ZENER H 05Z30 Y
2-D20	ED-330219	D ZENER H HZ20L 2
2-D21	ED-347612	⚠ D SILICON 2D4B41
2-D22	ED-301911	D SILICON H DS448
2-D23	ED-346564	D ZENER H HZ15L 1
2-D24,25	ED-324912	⚠ D SILICON 1D4B41 200/1.0A
2-D26	ED-346528	D ZENER H HZ6L C1
2-D27	ED-224526	⚠ D SILICON 10D1 100/1.0A
2-D28	ED-344153	D ZENER H 05Z30 Y
2-D29	ED-347963	D ZENER H 1Z6.2
2-D30	ED-325115	D ZENER H 05Z15 X
2-D31	ED-346528	D ZENER H HZ6L C1
2-D32	ED-324912	⚠ D SILICON 1D4B41 200/1.0A
2-R20	ER-325269	⚠ R CB H S10 FS RDS 1/4W 222J
2-R22	ER-325269	⚠ R CB H S10 FS RDS 1/4W 222J
2-R24	ER-325269	⚠ R CB H S10 FS RDS 1/4W 222J
2-R26	ER-325269	⚠ R CB H S10 FS RDS 1/4W 222J
2-R27	ER-337773	⚠ R OMF H S15 FS 1W 222J
2-R37,38	ER-308875	⚠ R CB H S15 FS RDS 1/2W 100J
2-R45	ER-333067	⚠ R OMF H S20 FS 2W 821J
2-R46	ER-333044	⚠ R OMF H S20 FS 2W 152J
2-R47	ER-308875	⚠ R CB H S15 FS RDS 1/2W 100J
2-R48,49	ER-305722	⚠ R OMF H SNP FS 2W 221J
2-R64	ER-326838	⚠ R CB H S10 FS RDS 1/4W 272J
2-R66	ER-333663	⚠ R CB H S15 FS RDS 1/2W 391J
2-R67	ER-326838	⚠ R CB H S10 FS RDS 1/4W 272J
2-R69	ER-333663	⚠ R CB H S15 FS RDS 1/2W 391J
2-R72	ER-200944	⚠ R CB H S10 FS RDS 1/4W 152J
2-R75	ER-324186	⚠ R CB H S10 FS RDS 1/4W 681J
2-R79	ER-327197	⚠ R CB H S10 FS RDS 1/4W 391J
2-R81	ER-323074	⚠ R CB H S10 FS RDS 1/4W 102J
2-R82	ER-323075	⚠ R CB H S10 FS RDS 1/4W 472J
2-R83	ER-327198	⚠ R CB H S10 FS RDS 1/4W 122J
2-R85	ER-200940	⚠ R CB H S10 FS RDS 1/4W 561J
2-R86	ER-322787	⚠ R CB H S10 FS RDS 1/4W 100J
2-FR1,2	ER-328520	⚠ R FUSE ERD2FC 1/4W 1000G
2-FR3,4	ER-337756	⚠ R FUSE ERD2FC S10 1/4W 4700G
2-FR5,6	ER-331619	⚠ R FUSE ERD2FC 1/4W 39R0G
2-FR7	ER-326169	⚠ R FUSE ERD2FC S10 1/4W 22R0G
2-FR8	ER-348873	⚠ R FUSE ERD2FC S10 1/4W
2-L1	EO-337880	COIL FIX 2 202AK-018 2.20UH
2-L2	EO-338420	COIL FIX 2 FL12R202E 2.00MH (V)
2-L3	EO-336934	COIL FIX 1 LAL03KH 2.20UH M
2-SW1	ES-347616	SW PUSH J-K1121#01 2THROW
2-VR1	EV-347614	VR ROTARY 16P20x3B C104
2-VR2	EV-347615	VR ROTARY 16P20x3A C104
2-RL1	EP-337159	RELAY SIGNAL G4Z-2282P 2NO 24V

MIC P.C BOARD

REF. NO.	PARTS NO.	DESCRIPTION
2-J1B	EJ-347618	PHONE JACK JL3A 9P

HEADPHONE P.C BOARD

REF. NO.	PARTS NO.	DESCRIPTION
2-J1C	EJ-347619	PHONE J 3P HLJ0606-20 6.3
2-L1C,2C	EO-336934	COIL FIX 1 LAL03KH 2.20UH M (V)

SPEAKER P.C BOARD

REF. NO.	PARTS NO.	DESCRIPTION
2-L1D	EO-342936	COIL BALUN (V)

PLAYER P.C BOARD

REF. NO.	PARTS NO.	DESCRIPTION
2-J8E	EJ-347474	SOCKET POWER M1674 6P

REF. NO.	PARTS NO.	DESCRIPTION
2-F4U	EF-306950	⚠ FUSE TSC A 250V 2.00A (U)
2-F4C	EF-306954	⚠ FUSE TSC 125V 2.00A (C,A)
2-F4E	EF-601301	⚠ FUSE SEMKO T 250V 2.00A (E,B,S,V)
2-F5U	EF-306950	⚠ FUSE TSC A 250V 2.00A (U)
2-F5C	EF-306954	⚠ FUSE TSC 125V 2.00A (C,A)
2-F5E	EF-601301	⚠ FUSE SEMKO T 250V T250V 2.00A (E,B,S,V)
2-F6U	EF-309389	⚠ FUSE TSC A 250V 0.40A (U)
2-F6C	EF-308848	⚠ FUSE TSC 125V 0.40A (C,A)
2-F6E	EF-668474	⚠ FUSE SEMKO T 250V 0.40A (E,B,S,V)
2-F7U	EF-327103	⚠ FUSE TSC A 250V 0.50A (U)
2-F7C	EF-305703	⚠ FUSE TSC 125V 0.63A (C,A)
2-F7E	EF-593706	⚠ FUSE SEMKO T 250V 0.50A (E,B,S,V)
2-F8U	EF-327103	⚠ FUSE TSC A 250V 0.50A (U)
2-F8C	EF-309390	⚠ FUSE TSC 125V 0.50A (C,A)
2-F8E	EF-593706	⚠ FUSE SEMKO T 250V 0.50A (E,B,S,V)

3. PRE AMP P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
3-1	BA-C1002A100A	PC PRE AMP BLK FD-7
3-IC2	EI-344291	IC NE654
3-IC3	EI-337835	IC NE652
3-IC5	EI-336761	IC LA6458S
3-TR1	ET-344275	TR 2SC2320L, F,G
3-TR2	ET-308141	TR 2SC2603 G
3-TR3,4	ET-200985	TR 2SC2603 F,G
3-TR5	ET-328578	TR 2SC2320 E,F
3-TR8	ET-328578	TR 2SC2320 E,F
3-TR9	ET-201580	TR 2SD894
3-TR10	ET-328437	TR 1SD1012-V F,G
3-TR11to17	ET-328578	TR 2SC2320 E,F
3-TR18to20	ET-200558	TR 2SA1115 E,F
3-TR22,23	ET-200505	TR 2SC2603 E,F
3-TR24	ET-309353	TR 2SC2274K E,F
3-TR25	ET-310833	TR 2SC2274K E
3-TR26	ET-310833	TR 2SC2274K E
3-TR28,29	ET-200505	TR 2SC2603 E,F
3-TR30	ET-328437	TR 2SD1012-V F,G
3-TR31	ET-337258	TR 2SC1843 E,F
3-TR32	ET-344275	TR 2SC2320L F,G
3-TR33	ET-328578	TR 2SC2320 E,F
3-TR34	ET-200985	TR 2SC2603 F,G
3-TR36,37	ET-200505	TR 2SC2603 E,F
3-D1	ED-337575	D SILICON H GMA-01-4-BT T26
3-D2to4	ED-301911	D SILICON H DS448
3-D6	ED-348012	D ZENER V HZ3C-1S7
3-D8	ED-200469	D SILICON H DS448 FA5 F10
3-D9	ED-308952	D GERMA V 1K34A-lR F07
3-D12	ED-344280	D SILICON H GMA-01-FY2 F05
3-D13	ED-337575	D SILICON H GMA-01-4-BT T26
3-D14	ED-344280	D SILICON H GMA-01-FY2 F05
3-VR1	EV-315414	R S-FIX H D8 3P 203
3-VR2	EV-322413	R S-FIX H D8 3P 302
3-VR3	EV-315414	R S-FIX H D8 3P 203
3-VR4	EV-336785	R S-FIX H TM8KV2-1S 3P 0.50W 104
3-VR5	EV-315413	R S-FIX H D8 3P 503
3-L2	EO-347162	COIL FIX 1 L-8 10MHZ J
3-T1	EO-345760	COIL OSC 1 32-5009-12 100KHZ
3-FL1	ER-7695	FILTER DB 201AK-005 100KHZ
3-FL3	EO-336738	COIL TUN 1 102AK-004 19.80KHZ
3-FL5	EO-315758	COIL TUN 1 100S-431 100.00KHZ
3-RL1	EP-337067	RELAY LEAD LAB2NS 2NO 18V
3-FR1,2	ER-331188	⚠ R FUSE ERD2FC S10 1/4W 8R2J
3-C13	EC-314992	C STY V F05 CQF09 681J 50DC
3-C59	EC-337777	C PP V F10 ECQ-F 272J 630DC
3-C61	EC-314993	C STY V SNP CQFS 751J 50DC
3-C63	EC-302265	C STY V F05 CQF09 271J 50DC
3-C67	EC-314990	C STY V SNP CQFS 101J 50DC
3-C78	EC-314992	C STY V F05 CQF09 681J 50DC

4. CONTROL P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
4-1U	BA-C1002A030A	PC CONTROL BLK FD-7 (U)
4-1C	BA-C1002A030B	PC CONTROL BLK FD-7 (C) (C,A)
4-1E	BA-C1002A030C	PC CONTROL BLK FD-7 (E) (E,S,V)
4-1LE	BA-C1002A030D	PC CONTROL BLK FD-7L
4-1LB	BA-C1002A030E	PC CONTROL BLK FD-7L
	CONTROL P.C BOARD	
4-IC1	EI-346965	IC TC47C21P NH-101
4-IC2	EI-346966	IC TC47C20P NH-201
4-IC3	EI-348465	IC LM6402H-190
4-IC4,5	EI-337008	IC LC7800
4-IC6	EI-315379	IC TC5066BP
4-IC7	EI-332258	IC M54516
4-IC8	EI-338171	IC LC4069UB
4-IC9	EI-330226	IC μPC1373H
4-IC10	EI-338171	IC LC4069UB
4-IC11	EI-330352	IC BA6109
4-IC12to14	EI-336794	IC LB1240
4-TR1to3	ET-200558	TR 2SA1115 E,F
4-TR5	ET-621235	TR 2SC536NP E,F,G
4-TR6	ET-621235	TR 2SC536NP E,F,G
4-TR7	ET-200558	TR 2SA1115 E,F
4-TR8	ET-332422	TR 2SB774 Q,R,S
4-TR9to11	ET-200985	TR 2SC2603 F,G
4-TR12	ET-200558	TR 2SA1115 E,F
4-TR13	ET-200985	TR 2SC2603 F,G
4-D1	ED-301911	D SILICON H DS448
4-D2	ED-200469	D SILICON H DS448 FA5 F10
4-D4	ED-200469	D SILICON H DS448 FA5 F10
4-D5	ED-301911	D SILICON H DS448
4-D6	ED-224526	D SILICON 10D1 100/1.0A
4-D7	ED-323057	D VARISTER MV12
4-D8	ED-301911	D SILICON H DS448
4-D9	ED-301911	D SILICON H DS448
4-D10to17	ED-301911	D SILICON H DS448
4-D19,20	ED-301911	D SILICON H DS448
4-D22,23	ED-301911	D SILICON H DS448
4-D25	ED-301911	D SILICON H DS448
4-D26	ED-338454	D ZENER V HZ9C-2S7
4-D27	ED-347149	D ZENER H 05Z8.2 Y
4-D28	ET-330717	PHOTO SENSOR NJL1644L
4-VR1	EV-522652	R S-FIX V V8K1-1 3P 105
4-L1	EO-330719	COIL FIX1 187LY-103K 10.00MH K
4-L2	EO-336934	COIL FIX 1 LAL03KH 2.20UH M
4-X1,2	EI-347434	OSC X'TAL HC-18/U 4.194304MHZ
4-X3	EI-337017	OSC CE CSB800A 0.800000MHZ
4-R50	ER-328067	⚠ R CB H S10 FS RDS 1/4W 331J
4-R77	ER-337754	⚠ R OMF H S15 FS 1W 100J
4-SR1	ER-347437	R COMP EXB-P88 104K
4-SR2	ER-347438	R COMP EXB-P87104K
4-SR3	ER-343420	R COMP EXB-P84104K
4-SR4	ER-347688	R COMP EXB-P88 472K
4-SR5,6	ER-347164	R COMP RKC 1/8 B8 223J
4-SR7	ER-347439	R COMP EXB-P84 473K
4-TC1	EC-330692	C S-FIX H TZ03R200E 4.2-20
	FLD P.C BOARD	
4-SW1Bto7B	ES-336780	SW TACT KHH10902
4-IND1B	EM-347435	IND FL BG-138Z DOUBLE
	TIMER SELECTOR P.C BOARD	
4-SW8C,9C	ES-336780	SW TACT KHH10902
4-SW11Cto13C	ES-336780	SW TACT KHH10902
	TIMER P.C BOARD	
4-SW10D	ES-336780	SW TACT KHH10902
	LAMP P.C BOARD	
4-LP1Eto4E	EL-347456	PL MINI BASE 14.0V 50MA

REF. NO.	PARTS NO.	DESCRIPTION
	BEAT CANCEL P.C BOARD	
4-SW14F	ES-344439	SW SLIDE 00420451 2-04-02
4-C29F	EC-346690	C STY V S05 CQFS 222J 250DC

5. TUNER P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
5-1U	BA-C1002A090A	PC TUNER BLK FD-7 (U)
5-1C	BA-C1002A090B	PC TUNER BLK FD-7 (C) (C,A)
5-1E	BA-C1002A090C	PC TUNER BLK FD-7 (E)
5-1V	BA-C1002A090D	PC TUNER BLK FD-7 (V)
5-1S	BA-C1002A090E	PC TUNER BLK FD-7 (S)
5-1LE	BA-C1002A090F	PC TUNER BLK FD-7L (E)
5-1LB	BA-C1002A090G	PC TUNER BLK FD-7L (B)
5-IC1	EI-322248	IC LA1231N
5-IC2	EI-343349	IC LA3390
5-IC3	EI-202218	IC LA1245
5-IC4	EI-315381	IC TD6102P
5-IC5	EI-336717	IC TC9125BP
5-TR1	ET-336935	TR 2SC3000 E,F
5-TR2	ET-332311	TR 2SA608SP D,E,F,G
5-TR3	ET-338410	TR 2SC2878 A,B (L ONLY)
5-TR4to6	ET-322778	TR 2SA608K-NP E,F,G(L ONLY)
5-TR7	ET-337604	TR FET 2SK246 Y (L ONLY)
5-TR9	ET-322775	TR 2SC536K-NP E,F,G(L ONLY)
5-TR10	ET-330588	TR FET 2SK19 O,Y (L ONLY)
5-TR11,12	ET-322775	TR 2SC536K-NP E,F,G(L ONLY)
5-TR13,14	ET-246846	TR 2SC536NP E,F,G,H
5-TR16	ET-246846	TR 2SC536NP E,F,G,H
5-TR17	ET-322778	TR 2SA608K-NP E,F,G
5-TR18	ET-246846	TR 2SC536NP E,F,G,H
5-TR19	ET-336937	TR FET 2SK223 E,F
5-TR20	ET-246846	TR 2SC536NP E,F,G,H
5-TR21	ET-330464	TR 2SC2603 D,E
5-TR22	ET-246846	TR 2SC536NP E,F,G,H
5-TR24	ET-200505	TR 2SC2603 E,F (V ONLY)
5-D1	ED-337575	D SILICON H GMA-01-4-BT T26
5-D2	ED-344280	D SILICON H GMA-01-FY2 F05 (L ONLY)
5-D3	ED-348205	D SILICON V MC931 DOUBLE (L ONLY)
5-D4,5	ED-337575	D SILICON H GMA-01-4-BT T26
5-D7,8	ED-337605	D VARACTOR SVC333 (A) DOUBLE
5-D9	ED-348205	D SILICON V MC931 DOUBLE
5-D10	ED-337575	D SILICON H GMA-01-4-BT T26
5-SW1	ES-344445	SW TACT EVQ-QHR12B
5-SW2	ES-344439	SW SLIDE 00420451 2-04-02 (U)
5-VR1	EV-337993	R S-FIX H RVF8P01 3P 203
5-VR2	EV-337995	R S-FIX H RVF8P01 3P 103
5-L1	EO-345904	COIL FIX 1 LAL03KH 1.50UH M
5-T1	EO-336878	COIL DET 2 78-1049
5-T2	EO-336879	COIL DET 2 78-1050
5-T3	EO-337598	COIL VARI 2 25A-1353-01
5-T4	EO-337599	COIL VARI 2 25A-1354-03 (L ONLY)
5-T5	EO-202215	COIL OSC 2 7NR-6721Y 100.0UH
5-T6	EO-307786	COIL OSC 2 7NR-6722Y 580.0UH (L ONLY)
5-T7	EO-343351	COIL IFT PEGK0008B-01 455.0KHZ
5-T8	EO-202216	COIL IFT 7MC-6733C 460.0KHZ
5-FL1U	ER-315407	FILTER CE SFE10.7MMKA 10.7MHZ (EXCEPT L,E)
5-FL1L	ER-345729	FILTER CE SFE10.7MZ1KA 10.7MHZ (L,E ONLY)
5-FL2U	ER-336804	FILTER CE SFE10.7MA8 10.7MHZ (EXCEPT V,E)
5-FL2L	ER-338338	FILTER CE MS3GKY-A 10.700MHZ (V,E)
5-FL3	ER-341654	FILTER LC LP 42W-1001
5-FL4U	ER-343352	FILTER CE SFU459B9 0.459MHZ (EXCEPT C)
5-FL4C	ER-343353	FILTER CE SFU460B9 0.460MHZ (C)
5-FL5U	ER-337327	FILTER CE BFU459C4N 0.459MHZ (EXCEPT C)
5-FL5U	ER-337327	FILTER CE BFU459C4N 0.459MHZ (EXCEPT C)
5-FL5C	ER-337328	FILTER CE BFU460C4N 0.46MHZ (C)
5-FL6V	ER-336830	FILTER LC LP BL-34HD (V)
5-X1	EI-327074	OSC X'TAL HC-18/U 9.000000MHZ
5-VC1to3	EC-330692	C S-FIX H TZ03R200E 4.2-20
5-R7	ER-324184	⚠ R CB H S10 FS RDS 1/4W 121J
5-R15	ER-324337	⚠ R CB H S10 FS RDS 1/4W 560J
5-R20to22	ER-324337	⚠ R CB H S10 FS RDS 1/4W 560J
5-R63	ER-324185	⚠ R CB H S10 FS RDS 1/4W 221J
5-R65	ER-324184	⚠ R CB H S10 FS RDS 1/4W 121J
5-R92,93	ER-324480	⚠ R CB H S10 FS RDS 1/4W 470J
5-R107	ER-324480	⚠ R CB H S10 FS RDS 1/4W 470J
5-R113	ER-324934	⚠ R CB H S10 FS RDS 1/4W 220J
5-R114	ER-324184	⚠ R CB H S10 FS RDS 1/4W 121J
5-C25U	EC-344486	C PP V F05 PP 391J 50DC (EXCEPT C)
5-C25C	EC-344478	C PP V F05 PP 561J 50DC (C)
5-C26U	EC-344486	C PP V F05 PP 391J 50DC (EXCEPT C)
5-C26C	EC-344478	C PP V F05 PP 561J 50DC (C)
5-C27,28	EC-344482	C PP V F05 PP 161J 50DC (U)
5-C36	EC-344483	C PP V F05 PP 102J 50DC
5-C42	EC-344481	C PP V F05 PP 4700G 50DC
5-C43	EC-344482	C PP V F05 PP 161J 50DC (L ONLY)
5-2	TA-347458	FRONT END FE391U13 88-108MHZ (EXCEPT V)
5-2V	TA-347459	FRONT END FE393E12 88-108MHZ (V)
5-TM1	EJ-344423	TERMINAL W/SCREW YKD31-0133 P 2P

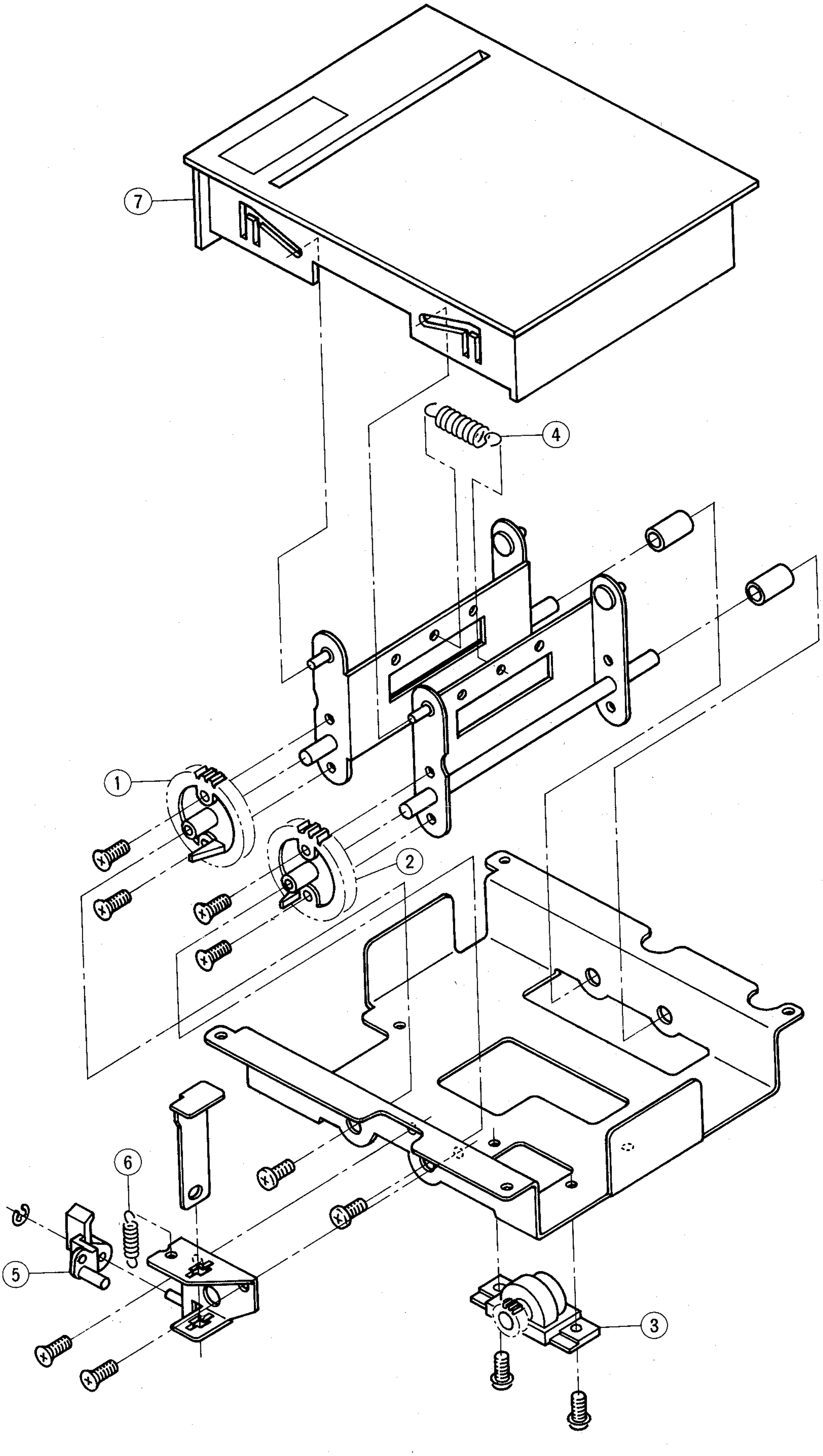
6. FUNCTION P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
6-IC1	EI-344764	IC M5218P-21
6-IC2	EI-332259	IC TC4052BP
6-D1,2	ED-307690	D ZENER H HZ7L A1
6-J1	EJ-336904	PIN J AJC-036-ACB P 6P
6-L1	EO-338420	COIL FIX 2 FL12R202E 2.00MH (L ONLY)
6-L2,3	EO-336934	COIL FIX 1 LAL03KH 2.20UH M (L ONLY)
6-R20,21	ER-323074	⚠ R CB H S10 FS RDS 1/4W 102J
6-1	EJ-329610	TERMINAL W/SCREW UB-0067 L 1P

7. POWER SUPPLY P.C BOARD

REF. NO.	PARTS NO.	DESCRIPTION
	POWER SUPPLY P.C BOARD	
7-D1	ED-200469	D SILICON H DS448 FA5 F10
7-SW1A	ES-337902	SW PUSH SDLD1P 01-1
7-RL1A	EP-347611	RELAY POWER G2R-1112PFD-V 1NO 12V
7-FL1	EO-338409	COIL LF FKOB160MH02 250UH (V ONLY)
7-C1U	EC-320548	⚠ C CE V F 103Z 250AC (U)
7-C1C	EC-314688	⚠ C CE V FZ 103P 125AC (C,A)
7-C1E	EC-338577	⚠ C CE V F 472M 400AC (E,V,S)
7-C2U	EC-320548	⚠ C CE V F 103Z 250AC (U)
7-C2C	EC-314688	⚠ C CE V FZ 103P 125AC (C,A)
7-C2E	EC-338577	⚠ C CE V F 472M 400AC (E,V,S)
	VOLTAGE SELECTOR P.C BOARD	
7-SW1B	ES-348463	SW SLIDE 00120297 01-2 (U ONLY)
7-SW2B	ES-347617	SW SELECTOR 0240#02 01-4 (U ONLY)
7-F1U	EF-309387	⚠ FUSE TSC A 250A 1.00A (U)
7-F1C	EF-310229	⚠ FUSE TSC 125V 1.00A (C,A)
7-F1E	EF-623103	⚠ FUSE SEMKO T 250V 1.00A (E,B,S,V)
7-F2U	EF-306951	⚠ FUSE TSC A 250V 2.50A (U)
7-F2C	EF-306957	⚠ FUSE TSC 125V 4.00A (C,A)
7-F2E	EF-601301	⚠ FUSE SEMKO T 250V 2.00A (E,B,S,V)
7-F3	EF-306951	⚠ FUSE TSC A 250V 2.50A (U)

REMO. CON. TRANSFER BLOCK



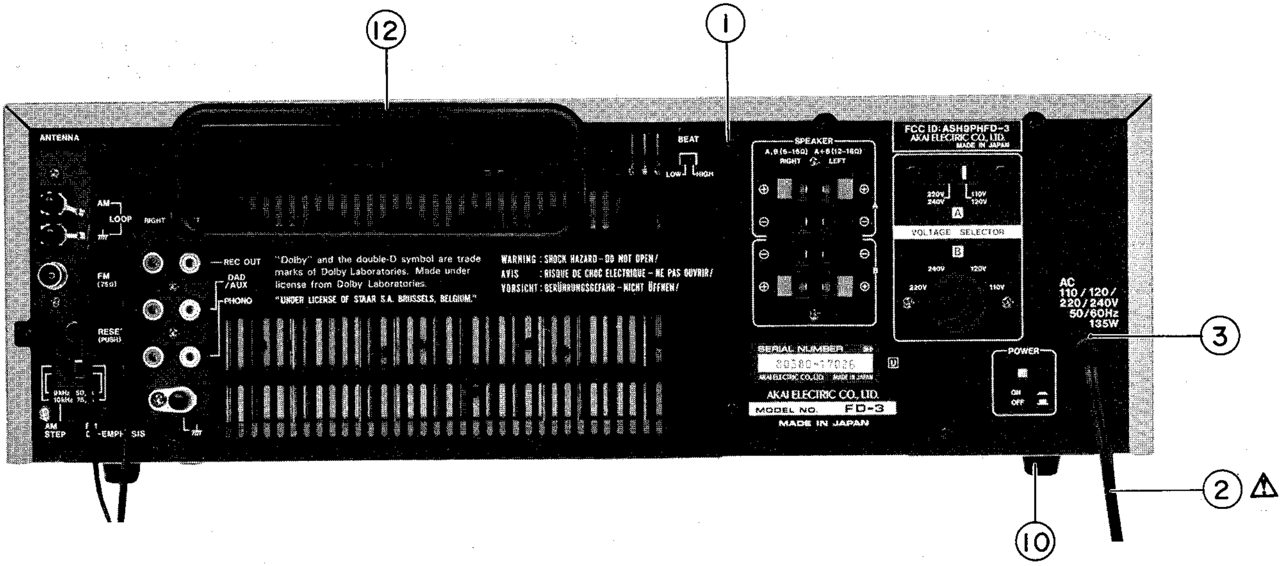
8. REMO. CON. TRANSFER BLOCK

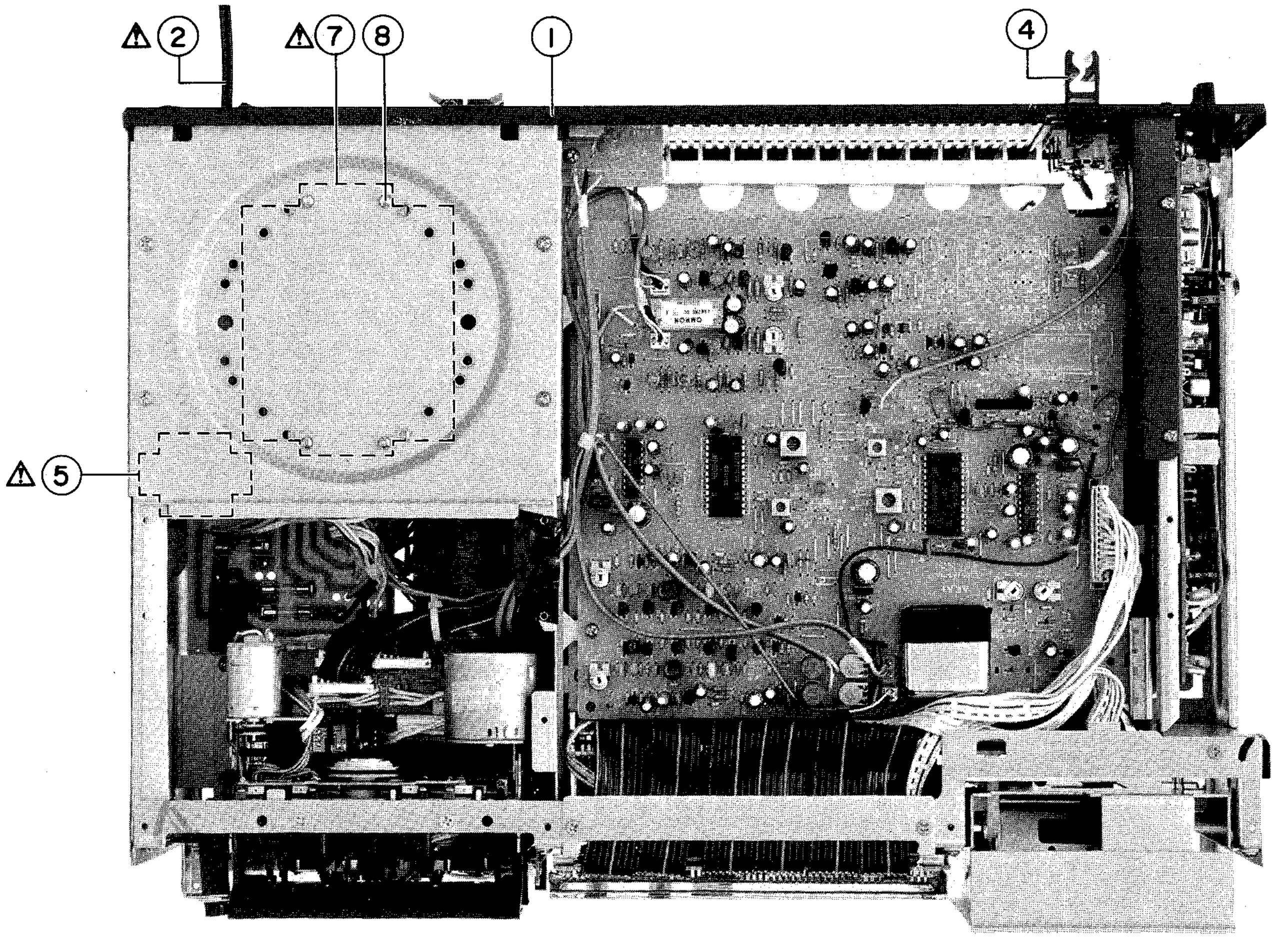
REF. NO.	PARTS NO.	DESCRIPTION
8-1	MZ-344850	GEAR TRANSFER (A)
8-2	MZ-347146	GEAR TRANSFER (B)
8-3	MZ-347620	DUMPER ASSY 3734-A-A-999-02
8-4	ZG-348994	SP PULL REMOCON TRANSFER
8-5	MZ-344853	CAM STOPPER
8-6	ZG-312943	SP T1-3.2/0.29-11.2 T1-059
8-7	SE-344873	ESCUTCHEON TRANSFER
8-7P	SE-344873B	ESCUTCHEON TRANSFER-P

9. REMOTE CONTROL BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
9-1	AX-347464	REMOCON UNIT FD-7
9-1P	AX-349152	REMOCON UNIT SFA10A002 NEW (P)
9-2	SP-749998	COVER BATTERY FD-3
9-2P	SP-749999	COVER BATTERY FD-3-P
9-3	TA-344883	STATION CARDS (EXCEPT L-B)
9-4	TA-344883B	STATION CARDS (B) (L-B ONLY)
9-ICZ01	EI-749983	IC μPD1943G
9-Q01	ET-302502	TR 2SC2001 K
9-Q02	ET-398788	TR 2SC945L R
9-LED02	ED-705414	D LED SE303A INFRARED
9-LED03	ED-322247	D LED SLP151D RED
9-SL-SW	ES-749947	SW SLIDE
9-S011to15	ES-336780	SW TACT KHH10902
9-S17to28	ES-336780	SW TACT KHH10902
9-X01	EH-749948	FILTER CE CSB455C

ASSEMBLY BLOCK

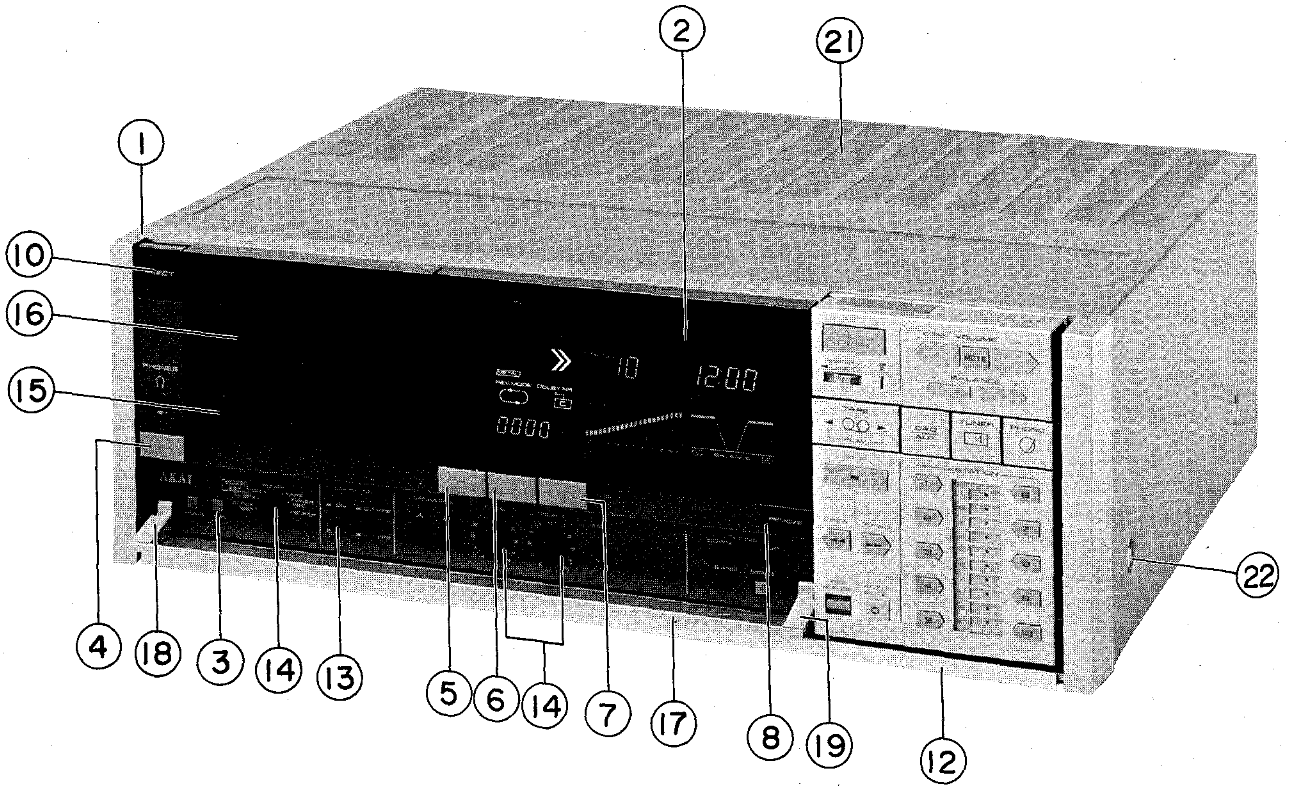

⑫
①
③
② ⚠
⑩
ANTENNA
AM LOOP
FM (75Ω)
RESET (PUSH)
AM STEP
REC OUT
DAD /AUX
PHONO
BEAT
LOW HIGH
SPEAKER
VOLTAGE SELECTOR
FCC ID: ASH9PHFD-3
AKAI ELECTRIC CO., LTD.
AC 110 / 120 / 220 / 240V 50/60Hz 135W
POWER
ON OFF
SERIAL NUMBER
AKAI ELECTRIC CO., LTD.
MODEL NO. FD-3
MADE IN JAPAN



10. ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
10-1U	SP-344875A	PANEL REAR (A) FD-7 (U)
10-1C	SP-344875B	PANEL REAR (B) FD-7 (U,A)
10-1E	SP-344875C	PANEL REAR (B) FD-7 (E,V)
10-1S	SP-344875D	PANEL REAR (B) FD-7 (S)
10-1LE	SP-344875E	PANEL REAR (B) FD-7L (E)
10-1LB	SP-344875F	PANEL REAR (B) FD-7L (B)
10-2U	EW-306428	⚠ AC CORD 2 CORES KP-700A, VFF U/T (U)
10-2C	EW-343363	⚠ AC CORD 2 CORES KP-8, SPT-2 105C UC (C)
10-2A	EW-305691	⚠ AC CORD 2 CORES KP-8, SPT-1 UC (A)
10-2E	EW-336923	⚠ AC CORD 2 CORES KP-419C, LTCE-2F EV (E,V)
10-2S	EW-336924	⚠ AC CORD 2 CORES KP-560, LTSA-2F S (S)
10-2B	EW-347025	⚠ AC CORD 2 CORES LTBS-2F B (B)
10-3	EZ-631945	STRAIN RELIEF SR-4N-4
10-4	SZ-332739	HOLDER ANTENNA
10-5U	BT-347465	⚠ TRANS POWER C1002T2-72 (U)
10-5C	BT-347466	⚠ TRANS POWER C1002T2-32 (C,A)
10-5E	BT-347467	⚠ TRANS POWER C1002T2-42 (E,V)
10-5S	BT-347468	⚠ TRANS POWER C1002T2-52 (S,B)
10-6x	ZS-315511	ST PAN30x06STL CMT CUP
10-7U	BT-347448	⚠ TRANS POWER C1002T-71 (U)
10-7C	BT-347449	⚠ TRANS POWER C1002T-31 (C)
10-7A	BT-347450	⚠ TRANS POWER C1002T-21 (A)
10-7E	BT-347451	⚠ TRANS POWER C1002T-41(E,V)
10-7S	BT-347452	⚠ TRANS POWER C1002T-51(S,B)
10-8	ZS-301398	ST BID40x08STL CMT
10-9x	ML-344857	JOINT
10-10	SA-347145	FOOT
10-11x	ZS-344914	ST PAN30x12STL CMT CUP
10-12	EE-337976	ANT LOOP LA-200A
10-13x	ZW-305013	RV POP32 (A)

FINAL ASSEMBLY BLOCK



11. FINAL ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
	FRONT PANEL BLOCK	
11-1	BD-C1002A110A	PANEL FRONT BLK FD-7
11-1P	BD-C1002A110B	PANEL FRONT BLK FD-7P
11-2	SE-344863	WINDOW FLD
11-3	SK-344871	KNOB (4)-B
11-4	SK-344868A	KNOB (2)-A
11-4P	SK-344868F	KNOB (2)-A-P
11-5	SK-344868B	KNOB (2)-B
11-5P	SK-344868G	KNOB (2)-D-P
11-6	SK-344868C	KNOB (2)-C
11-6	SK-344868H	KNOB (2)-C-P
11-7	SK-344868D	KNOB (2)-D
11-7P	SK-344868J	KNOB (2)-D-P
11-8	SK-344868E	KNOB (2)-E
11-9x	ZG-347622	SP PUSH KNOB (2)
11-10	SK-344869	KNOB (3)
11-11x	ZG-322189	SP (B)
	FINAL ASSEMBLY BLOCK	
11-12	SP-344862	SASH FRONT
11-12P	SP-344862B	SASH FRONT-P
11-13	SK-344870	KNOB (4)-A
11-14	SK-332534D	KNOB ROTARY (D)
11-15	BD-344865	LID FRAME FD-7
11-16	BD-344864	LID
11-17	SP-344872C	PANEL DOOR FD-7
11-17P	SP-344872G	PANEL DOOR FD-7-P
11-17L	SP-344872D	PANEL DOOR FD-7L
11-17LP	SP-344872H	PANEL DOOR FD-7L-P
11-18	TP-344879A	HINGE DOOR PANEL (L)
11-19	TP-344879B	HINGE DOOR PANEL (R)
11-20x	ZS-341962	PT BR23×10STL CMT
11-21	BC-344859	COVER
11-22	ZS-322570	ST BID40×08STL NI3

II. MODEL FP-7

RECOMMENDED SPARE PARTS

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

NO.	PARTS NO.	DESCRIPTION
1	BM-P1030A090A	⚠ MAIN MOTOR BLK FP-7
2	BM-347046	⚠ MOTOR MCA9B05
3	EC-309115	C COMP V AWS 104J 50DC
4	ED-337379	D LED NJL1102EH INFRARED
5	ED-332244	D LED SLP471D YLW
6	ED-557447	D SILICON H 1S1588
7	ED-306724	D SILICON S5277B 100/1.0A
8	ED-346615	D ZENER H HZ12 A2
9	ED-329058	D ZENER H HZ5 C1
10	ED-309069	D ZENER H HZ6 B2
11	EI-330352	IC BA6109
12	EI-338390	IC LA6458S-AKAI
13	EI-337903	IC LC4016B
14	EI-347036	IC LM6402A-121
15	EI-201940	IC NJM4558S
16	EI-349010	IC NJM4558S-B
17	EL-347033	PL CORD 16.0V 80MA 230/230
18	EO-345922	COIL FIX 1 LAL03KH 47.00UH K
19	EO-669273	COIL FIX 2 FL5R200 18UH
20	EP-337896	⚠ SOLENOID TDS-09SL-513 22V
21	EP-322437	RELAY LEAD LAB2NS 2NO 5V
22	ER-318647	⚠ R FUSE ERD2FC S10 1/4W 4R7J
23	ES-337895	SW LEAF MSW-0094NBK 01-1 NO
24	ES-347048	SW PUSH SCL101P 1-01-02N
25	ES-336780	SW TACT KHH10902
26	ET-347026	⚠ TR 2SB507HP E,F
27	ET-336941	⚠ TR 2SD313 E,F
28	ET-310148	⚠ TR 2SD612K E,F
29	ET-348326	PHOTO SENSOR NJL7201E C
30	ET-337891	PHOTO SENSOR PH101
31	ET-336816	TR FET 2SK30A R
32	ET-325501	TR 2SA1015 O,Y
33	ET-306720	TR 2SA966 O,Y
34	ET-307234	TR 2SC1815 Y,GR
35	ET-306719	TR 2SC2236 O,Y
36	EV-336852	R S-FIX H KVSF807U 3P 102
37	EV-336854	R S-FIX H KVSF807U 3P 104
38	EV-336843	R S-FIX H KVSF807U 3P 303
39	EV-306007	R S-FIX H TM8KV2-1S 3P 0.50W 203
40	EV-341233	R S-FIX H TM8KV2-1S 3P 0.50W 302
41	EZ-348409	OSC CE CSB400P 0.4 MHZ

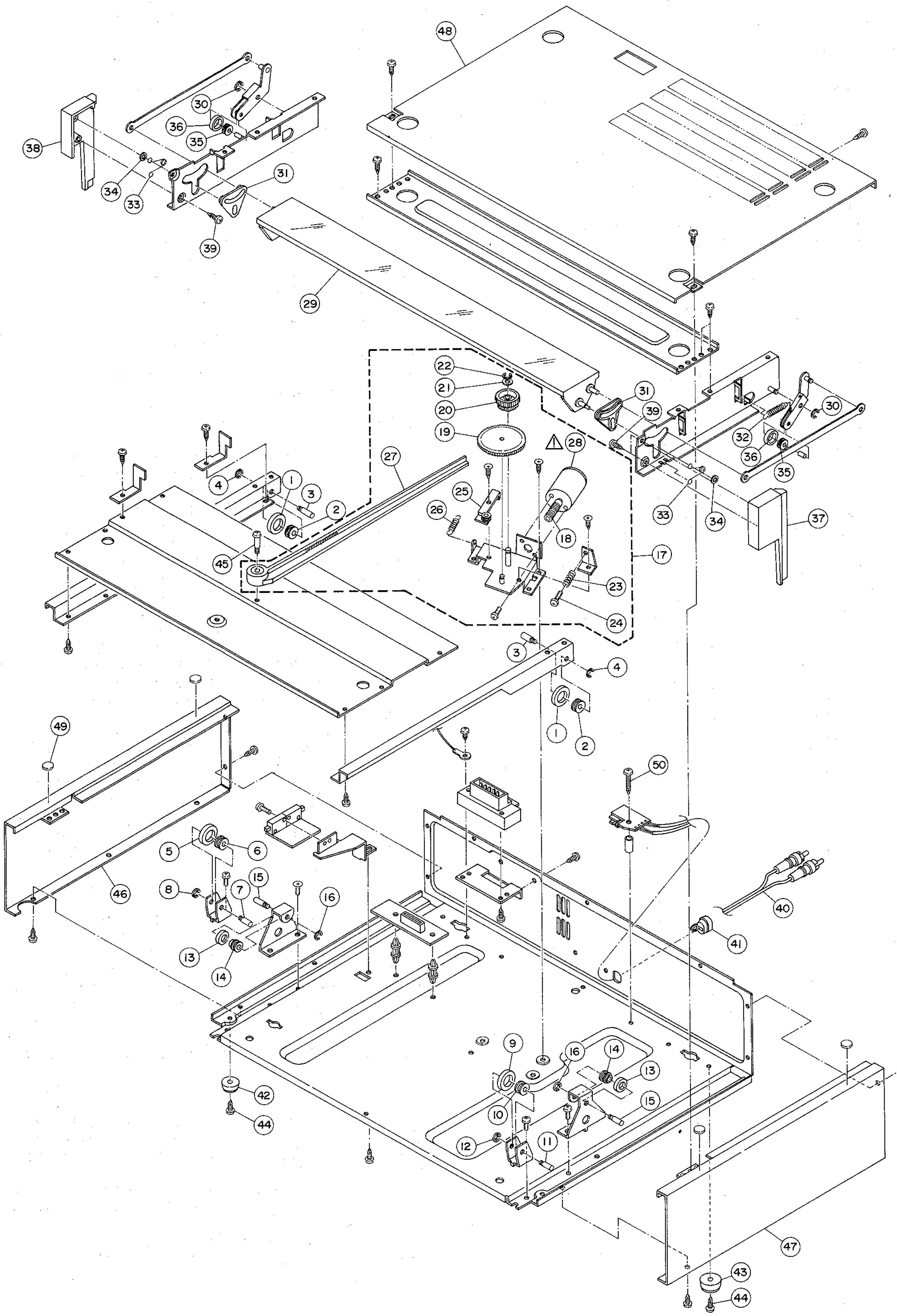
1. SERVO/SYS. CON. P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
1-1	BA-P1030A080A	PC SERVO SYSCON BLK FP-7
	SERVO/SYSCON P.C BOARD	
1-IC1A	EI-349010	IC NJM4558S-B
1-IC2A	EI-337903	IC LC4016B
1-IC3A	EI-347036	IC LM6402A-121
1-IC4A	EI-201940	IC NJM4558S
1-IC5A	EI-338390	IC LA6458S-AKAI
1-IC6A	EI-330352	IC BA6109
1-TR1A,2A	ET-306719	TR 2SC2236 O,Y
1-TR3A,4A	ET-325501	TR 2SA1015 O,Y
1-TR5A	ET-306719	TR 2SC2236 O,Y
1-TR6A	ET-306720	TR 2SA966 O,Y
1-TR7A	ET-307234	TR 2SC1815 Y,GR
1-TR8A	ET-336816	TR FET 2SK30A R
1-TR9Ato12A	ET-325501	TR 2SA1015 O,Y
1-TR13Ato17A	ET-307234	TR 2SC1815 Y,GR
1-TR18A	ET-325501	TR 2SA1015 O,Y
1-TR19Ato21A	ET-307234	TR 2SC1815 Y,GR
1-TR22A	ET-306719	TR 2SC2236 O,Y
1-TR23A	ET-306720	TR 2SA966 O,Y
1-TR24A	ET-306719	TR 2SC2236 O,Y
1-TR25A	ET-306720	TR 2SA966 O,Y
1-TR26Ato31A	ET-307234	TR 2SC1815 Y,GR
1-TR32Ato34A	ET-325501	TR 2SA1015 O,Y
1-TR35A	ET-307234	TR 2SC1815 Y,GR
1-TR36A	ET-336941	⚠ TR 2SD313 E,F
1-TR37A,38A	ET-307234	TR 2SC1815 Y,GR
1-TR39A	ET-310148	⚠ TR 2SD612K E,F
1-TR40A	ET-336941	⚠ TR 2SD313 E,F
1-TR41A	ET-347026	⚠ TR 2SB507HP E,F
1-TR42A,43A	ET-325501	TR 2SA1015 O,Y
1-TR44A	ET-306720	⚠ TR 2SA966 O,Y
1-D1Ato3A	ED-306724	D SILICON S5277B 100/1.0A
1-D4Ato7A	ED-557447	D SILICON H 1S1588
1-D8A,9A	ED-309069	D ZENER H HZ6 B2
1-D10A	ED-346615	D ZENER H HZ12 A2
1-D11A	ED-309069	D ZENER H HZ6 B2
1-D12A	ED-346615	D ZENER H HZ12 A2
1-D13A	ED-329058	D ZENER H HZ5 C1
1-J6A	EJ-348328	SOCKET FLEX MBLB10R-1J 10P
1-VR1A	EV-336854	R S-FIX H KVSF807U 3P 104
1-VR2A	EV-336843	R S-FIX H KVSF807U 3P 303
1-VR3A	EV-336852	R S-FIX H KVSF807U 3P 102
1-VR4A	EV-341233	R S-FIX H TM8KV2-1S 3P 0.50W 302
1-VR5A	EV-306007	R S-FIX H TM8KV2-1S 3P 0.50W 203
1-RL1A	EP-322437	RELAY LEAD LAB2NS 2NO 5V
1-L1A	EO-345922	COIL FIX 1 LAL03KH 47.00UH K
1-L2A,3A	EO-669273	COIL FIX 2 FL5R200 18UH
1-X1A	EZ-348409	OSC CE CSB400P 0.4 MHZ
1-R44A	ER-336820	R MF H F10 1/4W 4703F
1-R45A	ER-318337	R MF H F10 1/4W 6801F
1-R46A	ER-318319	R MF H F10 1/4W 1092F
1-R47A	ER-318318	R MF H F10 1/4W 9101F
1-R97A	ER-333607	⚠ R CB H S15 FS RDS 1/2W 121J
1-FR1Ato6A	ER-318647	⚠ R FUSE ERD2FC S10 1/4W 4R7J
1-C11A	EC-309115	C COMP V AWS 104J 50DC
	PHONO LOCATION DETECTOR P.C BOARD	
1-C23A	EC-323260	C EC V F05 NP LP 100M 16DC
1-PH1Bto3B	ET-348326	PHOTO SENSOR NJL7201E C
	LOCATION SENSOR P.C BOARD	
1-D1C	ED-337379	D LED NJL1102EH INFRARED
	SIZE SENSOR (A) P.C BOARD	
1-PH1D	ET-337891	PHOTO SENSOR PH101
	SIZE SENSOR (B) P.C BOARD	
1-PH1E	ET-337891	PHOTO SENSOR PH101
	INTERMEDIATE P.C BOARD	
1-J9F	EJ-348328	SOCKET FLEX MBLB10R-1J 10P
	KEYBOARD P.C BOARD	
1-SW1Gto4G	ES-336780	SW TACT KHH10902
1-D1Gto3G	ED-332244	D LED SLP471D YLW
	PHONO INTERMEDIATE P.C BOARD	
1-SW1H,2H	ES-347048	SW PUSH SCL101P 1-01-02N
	EXTERNAL P.C BOARD	
1-P10J	EJ-346330	PLUG POWER M1673 6P

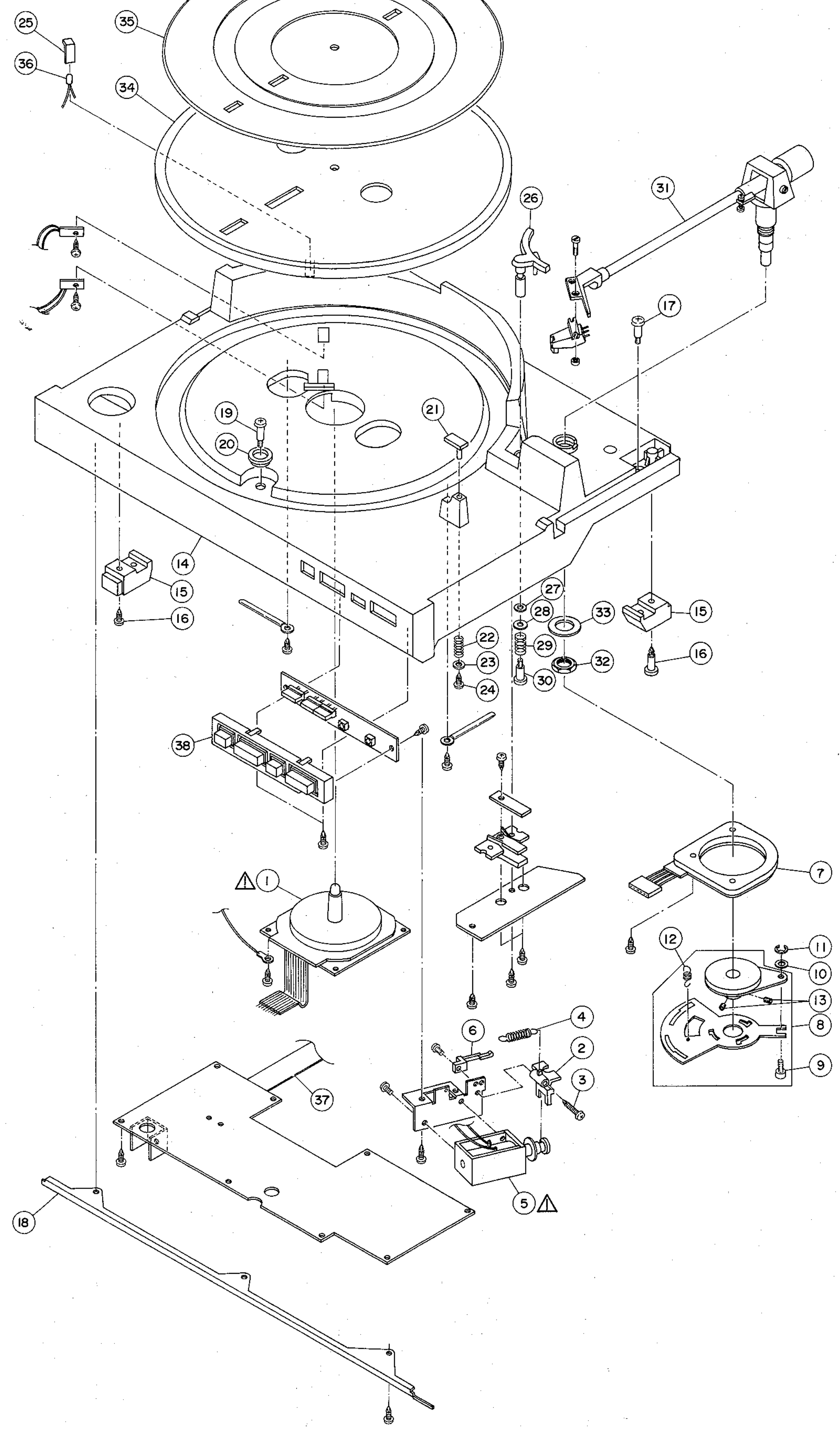
2. ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
	SLIDE CHASSIS BLOCK	
2-1	MR-346345	ROLLER (A)
2-2	SA-346346	ROLLER RUBBER (A)
2-3	MS-346347	PROP-2 SHAFT PIN (A)
2-4	ZW-410051	RING E 250SUP CMT
	ROLLER (A) L BLOCK	
2-5	MR-346345	ROLLER (A)
2-6	SA-346346	ROLLER RUBBER (A)
2-7	MS-346347	PROP-2 SHAFT PIN (A)
2-8	ZW-410051	RING E 250SUP CMT
	ROLLER (A) R BLOCK	
2-9	MR-346345	ROLLER (A)
2-10	SA-346346	ROLLER RUBBER (A)
2-11	MS-346347	PROP-2 SHAFT PIN (A)
2-12	ZW-410051	RING E 250SUP CMT
	ROLLER (B) BLOCK	
2-13	MB-346359	ROLLER (B)
2-14	SA-346360	ROLLER RUBBER (B)
2-15	MS-346347	PROP-2 SHAFT PIN (A)
2-16	ZW-410051	RING E 250SUP CMT
	SLIDE MOTOR (2) BLOCK	
2-17	BM-P1030A130A	SLIDE MOTOR (2) BLK FP-7
2-18	MZ-346352	GEAR WORM (D)
2-19	MZ-346350	GEAR (A)
2-20	MZ-346351	GEAR (B)
2-21	ZW-259773	PW41×070×050NYL
2-22	ZW-270101	RING E300SUP CMT
2-25	MR-346353	ROLLER RACK
2-26	ZG-313041	SP T1-5.0/0.55-16.0 T1-154
2-27	MZ-346305	GEAR RACK
2-28	BM-347046	⚠ MOTOR MCA9B05
	COVER OPENER MECHA. BLOCK	
2-29	SP-346320	COVER
2-30	ZW-270101	RING E300SUP CMT
2-31	SP-346356	COVER GUIDE
2-32	ZG-312998	SP T1-4.0/0.4-18.0 T1-112
2-33	ZG-346321	SP TORSION COVER
2-34	ZW-340648	RING CS190STL PKR
2-35	MR-346353	ROLLER RACK
2-36	SA-346361	ROLLER RUBBER (C)
2-37	SP-346303A	COVER HOLD (A)
2-37P	SP-346303C	COVER HOLD (A)-P
2-38	SP-346303B	COVER HOLD (B)
2-38P	SP-346303D	COVER HOLD (B)-P
2-39	ZS-302699	T2PAN23×06STL BNI
	ASSEMBLY BLOCK	
2-40	EW-347030	CORD 2P AUDIO
2-40A	EW-347031	CORD UL 2P AUDIO
2-41	EZ-631945	STRAIN RELIEF SR-4N-4
2-42	SA-346315	RUBBER FOOT (B)
2-43	SA-301770	TRAN LEG (J)
2-44	ZS-325495	T2BR30x06STL CMT
2-45	MS-302757	STOPPER SHAFT
2-46	SP-346308A	COVER SIDE (A)
2-47	SP-346308B	COVER SIDE (B)
2-48	SP-346319	COVER UPPER
2-49	MB-346363	CUSHION

ASSEMBLY BLOCK



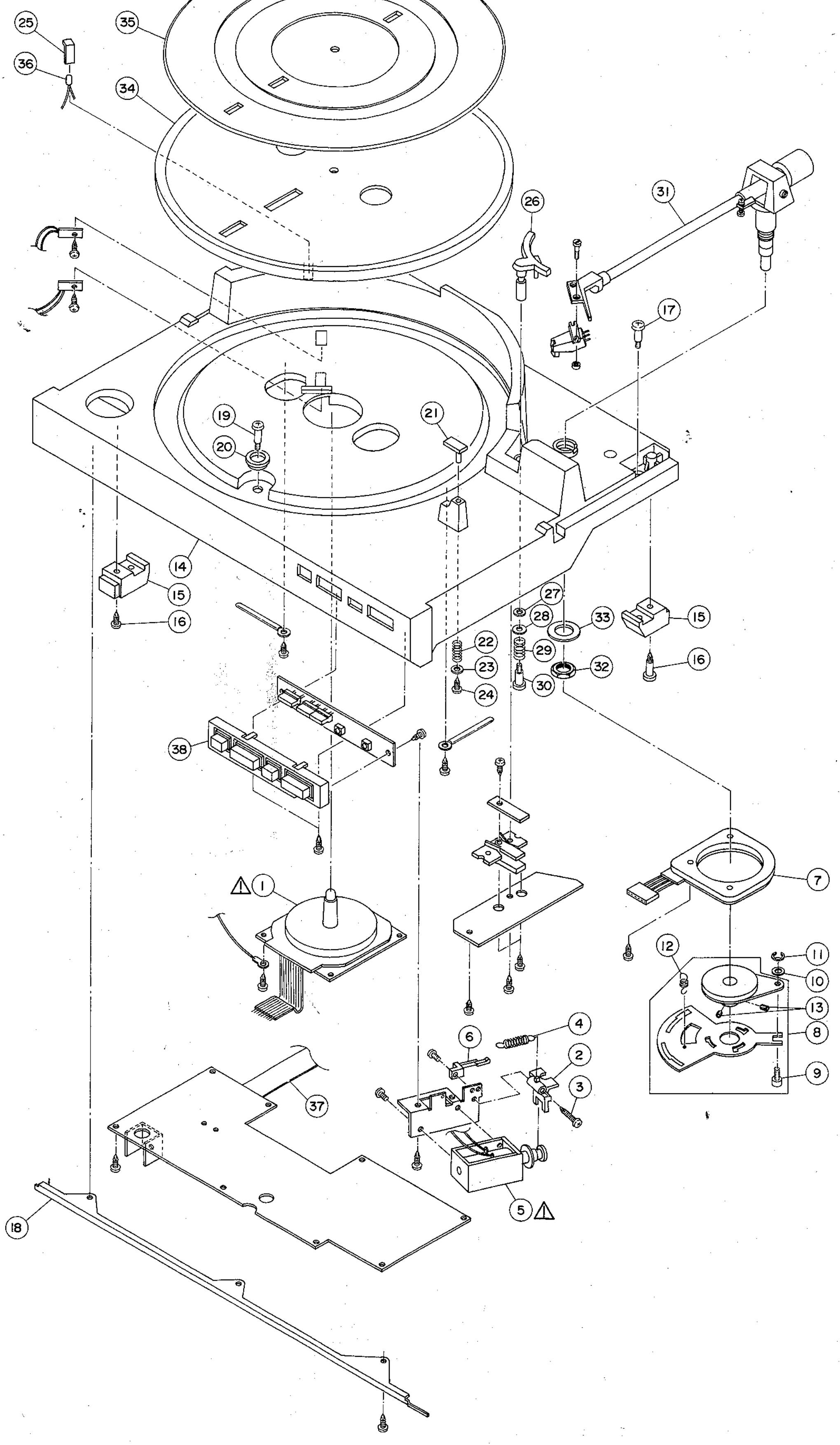
FINAL ASSEMBLY BLOCK



3. FINAL ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
	MAIN MOTOR BLOCK	
3-1	BM-P1030A090A	MAIN MOTOR BLK FP-7
	SOLENOID BLOCK	
3-2	TP-343044	ANGLE LIFTER
3-3	ZS-302767	SHAFT SCREW
3-4	ZG-345747	SP PULL RETURN
3-5	EP-337896	⚠ SOLENOID TDS-09SL-513 22V
3-6	ES-337895	SW LEAF MSW-0094NBK 01-1 NO
	COIL UNIT BLOCK	
3-7	TP-P1030A110A	COIL UNIT BLK FP-7
	MAGNET BLOCK	
3-8	TP-P1030A120A	MAGNET BLK FP-7
3-9	TP-336273	CAM ADJUST
3-10	ZW-601075	PW41×070×010PBR
3-11	ZW-342350	RING E 030 SPECIAL
3-12	ZG-312994	SP T1-4.0/0.4-10.0 T1-107
3-13	ZS-356804	6SET30×040SCM PKR HP
	FINAL ASSEMBLY BLOCK	
3-14	BC-346334	CABINET
3-14P	BC-346334B	CABINET-P
3-15	SA-346324	RUBBER FOOT
3-16	ZS-325426	TAPPING ROLLER SCREW
3-17	MS-302757	STOPPER SHAFT
3-18	SE-346300	MASK FRONT
3-18P	SE-346300B	MASK FRONT-P
3-19	ZS-346325	SCREW STOPPER
3-20	TP-346323	COVER STOPPER
3-21	TP-343059C	CLAMPER ARM-C
3-21P	TP-343059D	CLAMPER ARM-P
3-22	ZG-313183	SP C-4.5/0.4-8.0 C-030
3-23	ZW-623687	PW23×060×040STL CMT
3-24	ZS-669104	T2PAN23×06STL CMT
3-25	TP-343060	INDICATOR LAMP
3-26	TP-B343058X1	ARM ELEVATION (1) PART
3-27	ZW-515586	PW30×080×050STL CMT
3-28	ZW-439604	PW42×090×050STL CMT
3-29	ZG-313181	SP C-4.5/0.35-16.0 C-028
3-30	MS-302757	STOPPER SHAFT
3-31	TP-749956	TONE ARM (C-LESS) ARM-FP7
3-32	ZW-325521	N120×170×30STL CMT P100
3-33	ZW-336398	PW130×200×050STL CMT
3-34	TP-343042	PLATTER
3-35	TP-3430648	TABLE SHEET (B)
3-36	EL-347033	PL CORD 16.0V 80MA 230/230
3-37	EW-348210	CORD FLEXIBLE SML2CD 10P
3-38	SK-346317	KNOB SW
3-38P	SK-346317B	KNOB SW-P

FINAL ASSEMBLY BLOCK



3. FINAL ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
	MAIN MOTOR BLOCK	
3-1	BM-P1030A090A	MAIN MOTOR BLK FP-7
	SOLENOID BLOCK	
3-2	TP-343044	ANGLE LIFTER
3-3	ZS-302767	SHAFT SCREW
3-4	ZG-345747	SP PULL RETURN
3-5	EP-337896	⚠ SOLENOID TDS-09SL-513 22V
3-6	ES-337895	SW LEAF MSW-0094NBK 01-1 NO
	COIL UNIT BLOCK	
3-7	TP-P1030A110A	COIL UNIT BLK FP-7
	MAGNET BLOCK	
3-8	TP-P1030A120A	MAGNET BLK FP-7
3-9	TP-336273	CAM ADJUST
3-10	ZW-601075	PW41×070×010PBR
3-11	ZW-342350	RING E 030 SPECIAL
3-12	ZG-312994	SP T1-4.0/0.4-10.0 T1-107
3-13	ZS-356804	6SET30×040SCM PKR HP
	FINAL ASSEMBLY BLOCK	
3-14	BC-346334	CABINET
3-14P	BC-346334B	CABINET-P
3-15	SA-346324	RUBBER FOOT
3-16	ZS-325426	TAPPING ROLLER SCREW
3-17	MS-302757	STOPPER SHAFT
3-18	SE-346300	MASK FRONT
3-18P	SE-346300B	MASK FRONT-P
3-19	ZS-346325	SCREW STOPPER
3-20	TP-346323	COVER STOPPER
3-21	TP-343059C	CLAMPER ARM-C
3-21P	TP-343059D	CLAMPER ARM-P
3-22	ZG-313183	SP C-4.5/0.4-8.0 C-030
3-23	ZW-623687	PW23×060×040STL CMT
3-24	ZS-669104	T2PAN23×06STL CMT
3-25	TP-343060	INDICATOR LAMP
3-26	TP-B343058X1	ARM ELEVATION (1) PART
3-27	ZW-515586	PW30×080×050STL CMT
3-28	ZW-439604	PW42×090×050STL CMT
3-29	ZG-313181	SP C-4.5/0.35-16.0 C-028
3-30	MS-302757	STOPPER SHAFT
3-31	TP-749956	TONE ARM (C-LESS) ARM-FP7
3-32	ZW-325521	N120×170×30STL CMT P100
3-33	ZW-336398	PW130×200×050STL CMT
3-34	TP-343042	PLATTER
3-35	TP-3430648	TABLE SHEET (B)
3-36	EL-347033	PL CORD 16.0V 80MA 230/230
3-37	EW-348210	CORD FLEXIBLE SML2CD 10P
3-38	SK-346317	KNOB SW
3-38P	SK-346317B	KNOB SW-P

INDEX

1. MODEL FD-7

PARTS NO.	REF. NO.	PARTS NO.	REF. NO	PARTS NO.	REF. NO.	PARTS NO.	REF. NO.
AX-347464	9-1	ED-301911	2-D22	EF-308848	2-F6C	EO-338420	2-L2
AX-349152	9-1P	ED-301911	3-D2	EF-309387	7-F1U	EO-338420	6-L1
BA-C1002A030A	4-1U	ED-301911	3-D3	EF-309389	2-F6U	EO-342936	2-L1D
BA-C1002A030B	4-1C	ED-301911	3-D4	EF-309390	2-F8C	EO-343351	5-T7
BA-C1002A030C	4-1E	ED-301911	4-D25	EF-310229	7-F1C	EO-345760	3-T1
BA-C1002A030D	4-1LE	ED-301911	4-D15	EF-327103	2-F7U	EO-345904	5-L1
BA-C1002A030E	4-1LB	ED-301911	4-D23	EF-327103	2-F8U	EO-347162	3-L2
BA-C1002A070A	2-1U	ED-301911	4-D20	EF-593706	2-F7E	EP-337067	3-RL1
BA-C1002A070B	2-1C	ED-301911	4-D19	EF-593706	2-F8E	EP-337159	2-RL1
BA-C1002A070C	2-1E	ED-301911	4-D9	EF-601301	2-F4E	EP-347611	7-RL1A
BA-C1002A070D	2-1V	ED-301911	4-D10	EF-601301	2-F5E	ER-200940	2-R85
BA-C1002A090A	5-1U	ED-301911	4-D11	EF 601301	7-F2E	ER-200944	2-R72
BA-C1002A090B	5-1C	ED-301911	4-D12	EF-623103	7-F1E	ER-305722	2-R48
BA-C1002A090C	5-1E	ED-301911	4-D13	EF-668474	2-F6E	ER-305722	2-R49
BA-C1002A090D	5-1V	ED-301911	4-D14	EH-749948	9-X01	ER-308875	2-R37
BA-C1002A090E	5-1S	ED-301911	4-D17	EI-202218	5-IC3	ER-308875	2-R38
BA-C1002A090F	5-1LE	ED-301911	4-D22	EI-315379	4 IC6	ER-308875	2-R47
BA-C1002A090G	5-1LB	ED-301911	4-D16	EI-315381	5-IC4	ER-315407	5-FL1U
BA-C1002A100A	3-1	ED-301911	4-D1	EI-322248	5-IC1	ER-322787	2-R86
BC-344859	11 21	ED-301911	4-D5	EI-323563	2-IC3	ER-323074	2-R81
BD-B344049B	1-79	ED-301911	4-D8	EI-327074	5-X1	ER-323074	6-R20
BD-C1002A110A	11-1	ED-307690	6-D2	EI-330226	4-IC9	ER-323074	6-R21
BD-C1002A110B	11-1P	ED-307690	6-D1	EI-330352	4-IC11	ER-323075	2-R82
BD-344864	11-16	ED-308952	3-D9	EI-332258	4-IC7	ER-324184	5-R7
BD-344865	11-15	ED-310340	1-96	EI-332259	6-IC2	ER-324184	5-R114
BF-344029	1-64	ED-322247	9-LED03	EI-336717	5-IC5	ER-324184	5-R65
BH-T2045A030A	1-2	ED-323057	4-D7	EI-336761	3 IC5	ER-324185	5-R63
BL-T2045A050A	1-80	ED-324912	2-D24	EI-336794	4-IC12	ER-324186	2-R75
BL-T2045A060A	1-81	ED-324912	2-D25	EI-336794	4-IC13	ER-324337	5-R22
BM-B604490	1-105	ED-324912	2-D32	EI-336794	4-IC14	ER-324337	5-R20
BM-B604491	1-109	ED-325115	2-D30	EI-337008	4-IC5	ER-324337	5-R15
BR-344098	1-57	ED-330219	2-D20	EI-337008	4-IC4	ER-324337	5-R21
BT-347448	10-7U	ED-337153	2-D6	EI-337017	4-X3	ER-324480	5-R107
BT-347449	10-7C	ED-337153	2-D7	EI-337228	2-IC1	ER-324480	5-R93
BT-347450	10-7A	ED-337153	2-D9	EI-337228	2-IC5	ER-324480	5-R92
BT-347451	10-7E	ED-337153	2-D10	EI-337228	2-IC6	ER-324934	5-R113
BT-347452	10-7S	ED-337153	2 D12	EI-337835	3 IC3	ER-325269	2-R20
BT-347465	10-5U	ED-337153	2-D13	EI-338171	4-IC8	ER-325269	2-R22
BT-347466	10-5C	ED-337575	3-D1	EI-338171	4-IC10	ER-325269	2-R24
BT-347467	10-5E	ED-337575	3-D13	EI-343349	5-IC2	ER-325269	2-R26
BT-347468	10-5S	ED-337575	5-D1	EI-343371	2-IC2	ER-326269	2-FR7
BZ-T2045A020D	1-1	ED-337575	5-D5	EI-343390	2-IC4	ER-326838	2-R64
BZ-T2045A040A	1-28	ED-337575	5-D10	EI-344291	3-IC2	ER-326838	2-R67
EA-343156	1-7	ED-337575	5-D4	EI-344764	6-IC1	ER-327197	2-R79
EC-302265	3-C63	ED-337605	5-D8	EI-346965	4-IC1	ER-327198	2-R83
EC-314688	7-C2C	ED-337605	5-D7	EI-346966	4-IC2	ER-328067	4-R50
EC-314688	7-C1C	ED-338454	4-D26	EI-347434	4-X2	ER-328520	2-FR2
EC-314990	3-C67	ED-344153	2-D19	EI-347434	4-X1	ER-328520	2-FR1
EC-314992	3-C13	ED-344153	2-D28	EI-348465	4-IC3	ER-331188	3-FR1
EC-314992	3-C78	ED-344280	3-D12	EI-749983	9-ICZ01	ER-331188	3-FR2
EC-314993	3-C61	ED-344280	3-D14	EJ-329610	6-1	ER-331619	2-FR5
EC-320548	7-C2U	ED-344280	5-D2	EJ-336904	6-J1	ER-331619	2-FR6
EC-320548	7-C1U	ED-346157	2-D5	EJ-344423	5-TM1	ER-333044	2-R46
EC-330692	4-TC1	ED-346528	2-D1	EJ-347474	2-J8E	ER-333067	2-R45
EC-330692	5-VC1	ED-346528	2-D2	EJ-347618	2-J1B	ER-333663	2-R66
EC-330692	5-VC3	ED-346528	2-D26	EJ-347619	2-J1C	ER-333663	2-R69
EC-330692	5-VC2	ED-346528	2-D31	EL-347456	4-LP1E	ER-336804	5-FL2U
EC-337777	3-C59	ED-346561	2-D17	EL-347456	4-LP3E	ER-336830	5-FL6V
EC-338577	7-C2E	ED-346561	2-D18	EL-347456	4-LP4E	ER-337327	5-FL5U
EC-338577	7-C1E	ED-346564	2-D23	EL-347456	4-LP2E	ER-337328	5-FL5C
EC-344478	5-C26C	ED-346576	2-D15	EL-348214	1-113	ER-337695	3-FL1
EC-344478	5-C25C	ED-346576	2-D16	EM-347435	4-IND1B	ER-337754	4-R77
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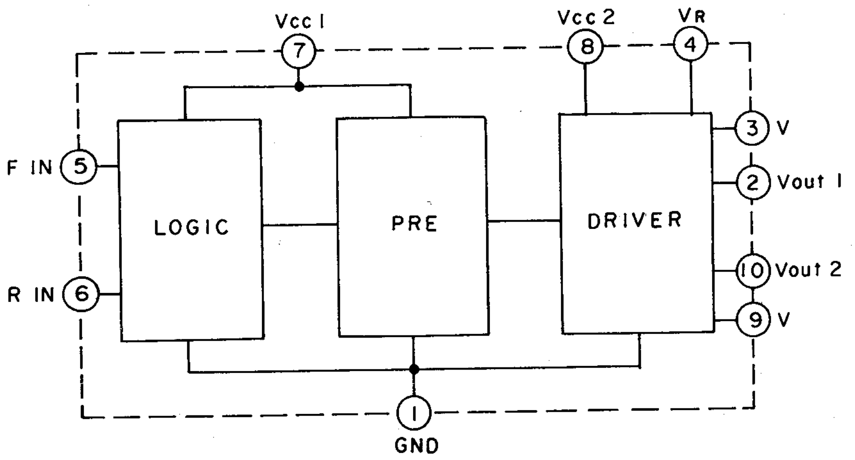
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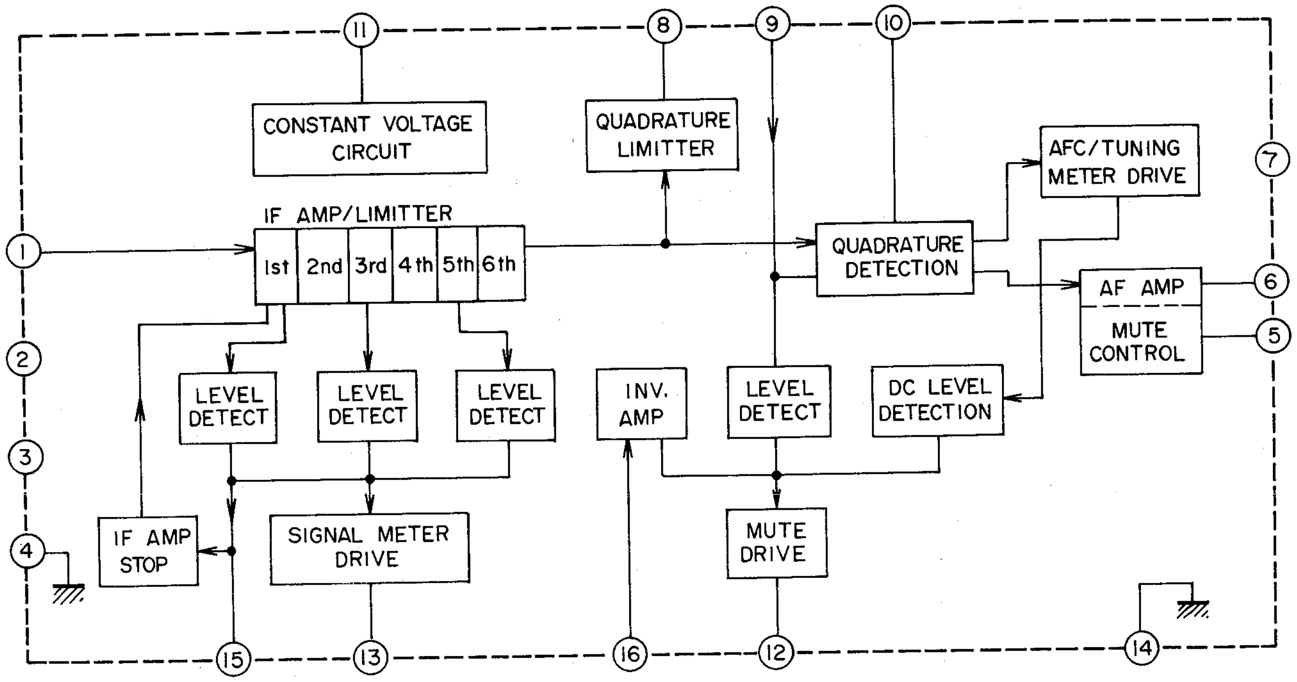
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3rd
4th
5th
6th
QUADRATURE DETECTION
AF AMP
6
MUTE CONTROL
5
2
LEVEL DETECT
LEVEL DETECT
LEVEL DETECT
INV. AMP
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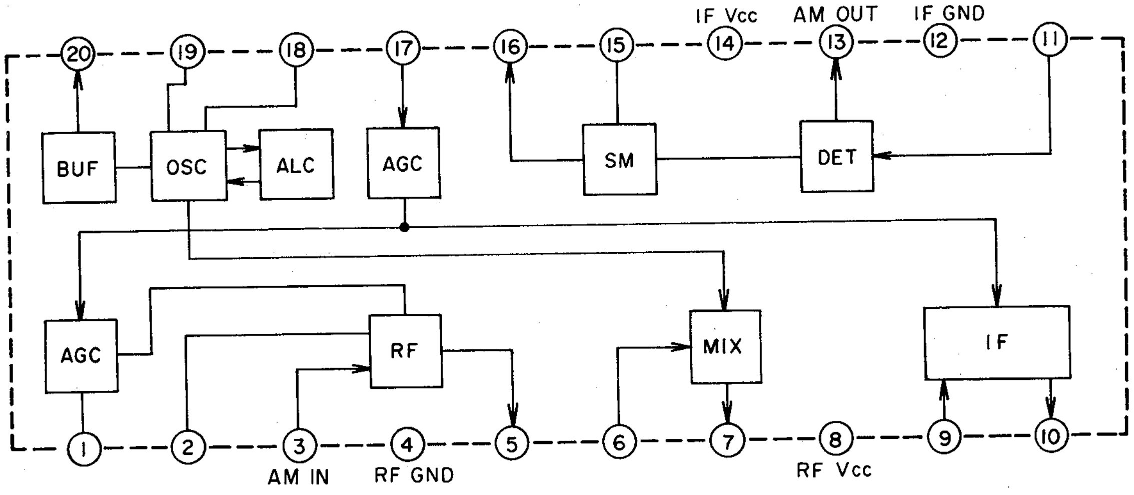
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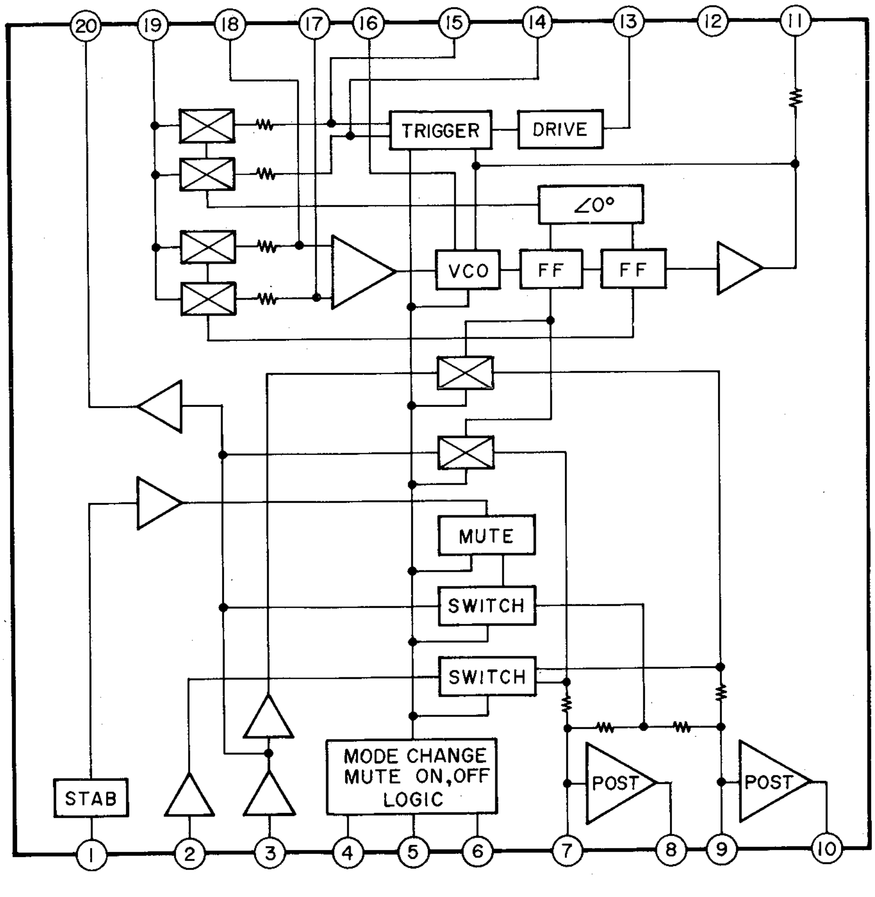
RF Vcc

LA3390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SWITCH
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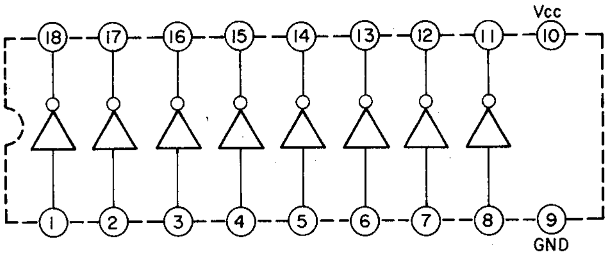
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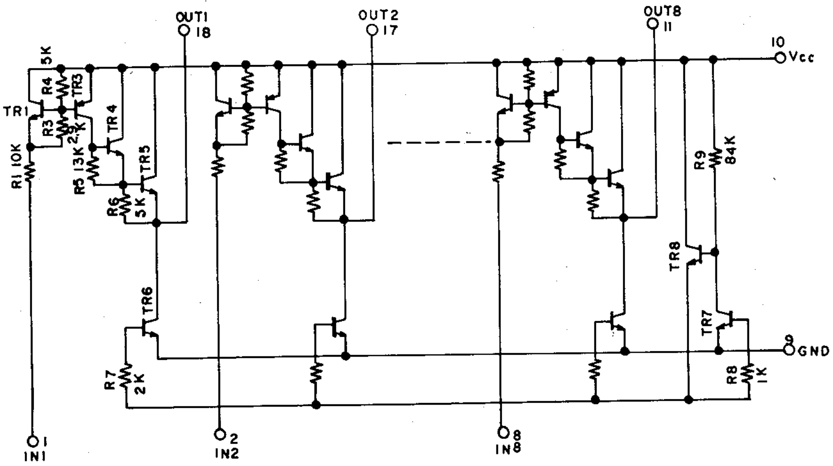
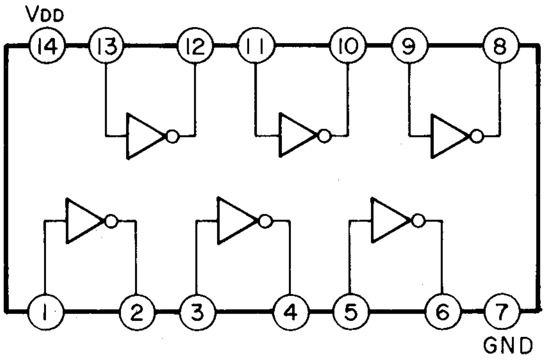
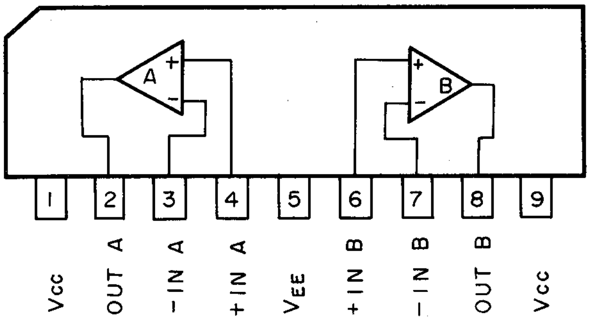
10
1
2
3
4
5
6
7
8
9
GND


OUT1
18
OUT2
17
OUT8
11
10
Vcc
R4 5K
TR1
R3 2K
TR3
TR4
R1 10K
R5 13K
TR5
R6 5K
TR6
R7 2K
TR8
R9 84K
TR7
R8 1K
9
GND
1
IN1
2
IN2
8
IN8

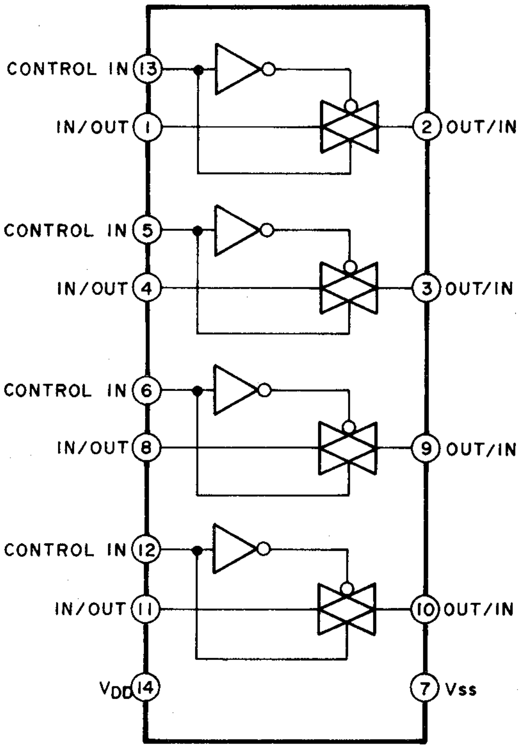
LC4069UB, MC14069UB


VDD
14
13
12
11
10
9
8
1
2
3
4
5
6
7
GND

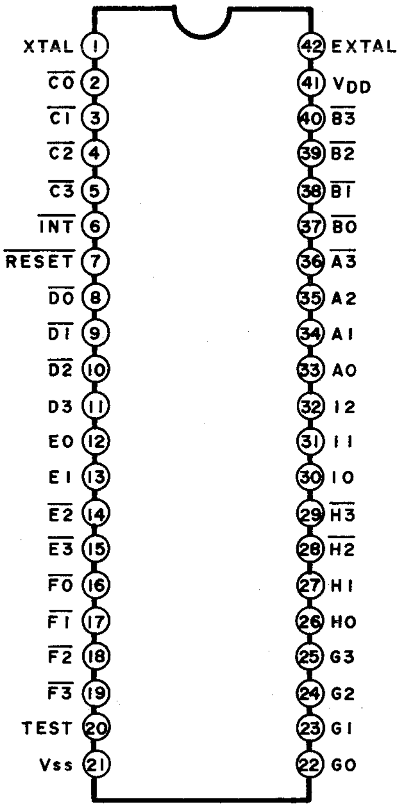
LC6458S


A
+
−
B
+
−
1
2
3
4
5
6
7
8
9
V_{CC}
OUT A
−IN A
+IN A
V_{EE}
+IN B
−IN B
OUT B
V_{CC}

LC4016B


CONTROL IN 13
IN/OUT 1
2 OUT/IN
CONTROL IN 5
IN/OUT 4
3 OUT/IN
CONTROL IN 6
IN/OUT 8
9 OUT/IN
CONTROL IN 12
IN/OUT 11
10 OUT/IN
VDD 14
7 Vss

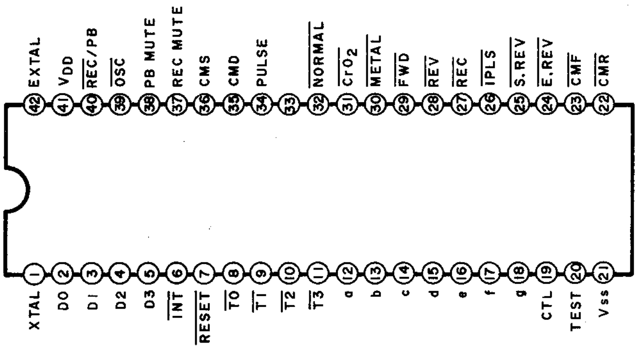
LM6402A-121


XTAL 1
$\overline{C0}$ 2
$\overline{C1}$ 3
$\overline{C2}$ 4
$\overline{C3}$ 5
$\overline{INT}$ 6
$\overline{RESET}$ 7
$\overline{D0}$ 8
$\overline{D1}$ 9
$\overline{D2}$ 10
D3 11
E0 12
E1 13
$\overline{E2}$ 14
$\overline{E3}$ 15
$\overline{F0}$ 16
$\overline{F1}$ 17
$\overline{F2}$ 18
$\overline{F3}$ 19
TEST 20
Vss 21
42 EXTAL
41 VDD
40 $\overline{B3}$
39 $\overline{B2}$
38 $\overline{B1}$
37 $\overline{B0}$
36 $\overline{A3}$
35 A2
34 A1
33 A0
32 I2
31 I1
30 I0
29 $\overline{H3}$
28 $\overline{H2}$
27 H1
26 H0
25 G3
24 G2
23 G1
22 G0

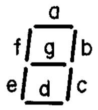
LM6402A-121

Pin No.	Symbol	Description
1	X TAL	400 kHz Crystal Oscillator input
2	$\overline{\mathrm{C0}}$	ANTI SKATING, Active at "L"
3	$\overline{\mathrm{C1}}$	LOW VOLTAGE } TONE ARM UP/DOWN PLUNGER DRIVE Active at "L" (HIGH DRIVE → 3 SEC)
4	$\overline{\mathrm{C2}}$	HIGH VOLTAGE
5	$\overline{\mathrm{C3}}$	RECORD SENSOR ILLUMINATOR LAMP DRIVE, Active at "L"
6	$\overline{\mathrm{INT}}$	Initialize terminal, Initialize at "L"
7	$\overline{\mathrm{RESET}}$	Reset terminal, Reset at "L"
8	$\overline{\mathrm{D0}}$	SPEED SERVO } ARM MOTOR CONTROL signal output D0, 1, 2: Active at "L" D3 : Active at "H"
9	$\overline{\mathrm{D1}}$	FWD
10	$\overline{\mathrm{D2}}$	REV
11	D3	SLOW
12	E0	MAIN MOTOR SPEED (33-1/3 / 45 rpm) control output, 33 at "L", 45 at "H"
13	E1	MAIN MOTOR ON/OFF (PLAY/STOP) signal output, ON at "L", OFF at "H"
14	$\overline{\mathrm{E2}}$	SLIDE MOTOR DRIVE (OPEN) output } Active at "L"
15	$\overline{\mathrm{E3}}$	SLIDE MOTOR DRIVE (CLOSE) output
16	$\overline{\mathrm{F0}}$	33-1/3 } LED DRIVE output, Active at "L"
17	$\overline{\mathrm{F1}}$	45 rpm
18	$\overline{\mathrm{F2}}$	REPEAT
19	$\overline{\mathrm{F3}}$	DISK END signal output, END at "H"
20	TEST	Connected to ground
21	Vss	
22	G0	Not used (open)
23	G1	
24	G2	
25	G3	
26	H0	
27	H1	Not used (Connected to ground)
28	$\overline{\mathrm{H2}}$	17 cm Record Size Detection input } Active at "L"
29	$\overline{\mathrm{H3}}$	30 cm Record Size Detection input
30	I0	Arm Location Sensor 1 input } Active at "H"
31	I1	Arm Location Sensor 2 input
32	I2	Arm Location Sensor 3 input
33	A0	CABINET Location Detection (OPEN) input } Active at "H"
34	A1	CABINET Location Detection (CLOSE) input
35	A2	Arm UP/DOWN Detection input, UP at "H", DOWN at "L"
36	$\overline{\mathrm{A3}}$	CABINET OPEN/CLOSE signal input, Active at "L"
37	$\overline{\mathrm{B0}}$	START/CUT signal input, Active at "L"
38	$\overline{\mathrm{B1}}$	CUE (ARM UP/DOWN) signal input, Active at "L"
39	$\overline{\mathrm{B2}}$	REPEAT signal input, Active at "L"
40	$\overline{\mathrm{B3}}$	SPEED (33/45) Selection signal input, Active at "L"
41	VDD	+5 V
42	EX TAL	400 kHz Crystal Oscillator input

LM6402H-155


42 EXTAL
41 V_{DD}
40 $\overline{\mathrm{REC/PB}}$
39 $\overline{\mathrm{OSC}}$
38 PB MUTE
37 REC MUTE
36 CMS
35 CMD
34 PULSE
33
32 $\overline{\mathrm{NORMAL}}$
31 $\overline{\mathrm{CrO_2}}$
30 $\overline{\mathrm{METAL}}$
29 $\overline{\mathrm{FWD}}$
28 $\overline{\mathrm{REV}}$
27 $\overline{\mathrm{REC}}$
26 $\overline{\mathrm{IPLS}}$
25 $\overline{\mathrm{S.REV}}$
24 $\overline{\mathrm{E.REV}}$
23 $\overline{\mathrm{CMF}}$
22 $\overline{\mathrm{CMR}}$
1 XTAL
2 D0
3 D1
4 D2
5 D3
6 $\overline{\mathrm{INT}}$
7 $\overline{\mathrm{RESET}}$
8 $\overline{\mathrm{T0}}$
9 $\overline{\mathrm{T1}}$
10 $\overline{\mathrm{T2}}$
11 $\overline{\mathrm{T3}}$
12 a
13 b
14 c
15 d
16 e
17 f
18 g
19 CTL
20 TEST
21 Vss

LM6402H-155, 190

Pin No.	Symbol	Description
1	X TAL	Crystal oscillator terminal
2	D0	CONTROL DATA INPUT
3	D1	
4	D2	
5	D3	
6	$\overline{\mathrm{INT}}$	Cam Motor Rotation Pulse input
7	$\overline{\mathrm{RESET}}$	Reset terminal
8	T0	11G } FLD Digit Designation output & Matrix Digit output
9	T1	10G
10	T2	9G
11	T3	8G
12	a	7 Segment Data output 
13	b	
14	c	
15	d	
16	e	
17	f	
18	g	
19	CTL	Input IC selection signal output
20	TEST	Connected to ground
21	Vss	
22	$\overline{\mathrm{CMR}}$	Reverse turn } Cam Motor control output, Active at "L"
23	$\overline{\mathrm{CMF}}$	Forward turn
24	$\overline{\mathrm{E.\ REV}}$	Eternal (Continuous) Reverse } FLD Drive output, Active at "L"
25	$\overline{\mathrm{S.\ REV}}$	Single Reverse
26	$\overline{\mathrm{IPLS}}$	IPLS
27	$\overline{\mathrm{REC}}$	Record
28	$\overline{\mathrm{REV}}$	Reverse
29	$\overline{\mathrm{FWD}}$	Forward
30	$\overline{\mathrm{METAL}}$	METAL tape } FL Display Drive output & PRE AMP EQ Control output Active at "L"
31	$\overline{\mathrm{CrO_2}}$	$\mathrm{CrO_2}$ tape
32	$\overline{\mathrm{NORMAL}}$	Normal tape

Pin No.	Symbol	Description
33		
34	PULSE	Reel Rotation Pulse input
35	CMD	Cam Motor Direction signal input
36	CMS	Cam Motor STOP Detection signal input
37	REC MUTE	Recording Mute at “H”
38	PB MUTE	Playback Mute at “H”
39	$\overline{\text{OSC}}$	Oscillator Drive at “L”
40	$\overline{\text{REC}}$/PB	Recording at “L”, Playback at “H”
41	VDD	+5 V
42	EXTAL	Crystal Oscillator terminal

KEY MATRIX (INPUT EXPANDER)

IC3 (LM6402H) Symbol			T3	T2	T1	T0	CTL
	IC3 Pin No.		11	10	9	8	19
		IC4, 5 (LC7800) Pin No.	19	20	21	22	27
D3	5	23	EJECT (STOP) ①			COUNTER RESET ⑮	H
D2	4	24	FWD	REW			H
D1	3	25	REV	AUTO MUTE	REV SELECT ⑪		H
D0	2	26	REC	REC CANCEL	IPLS ⑫		H

* ○ = IC4 Pin No.

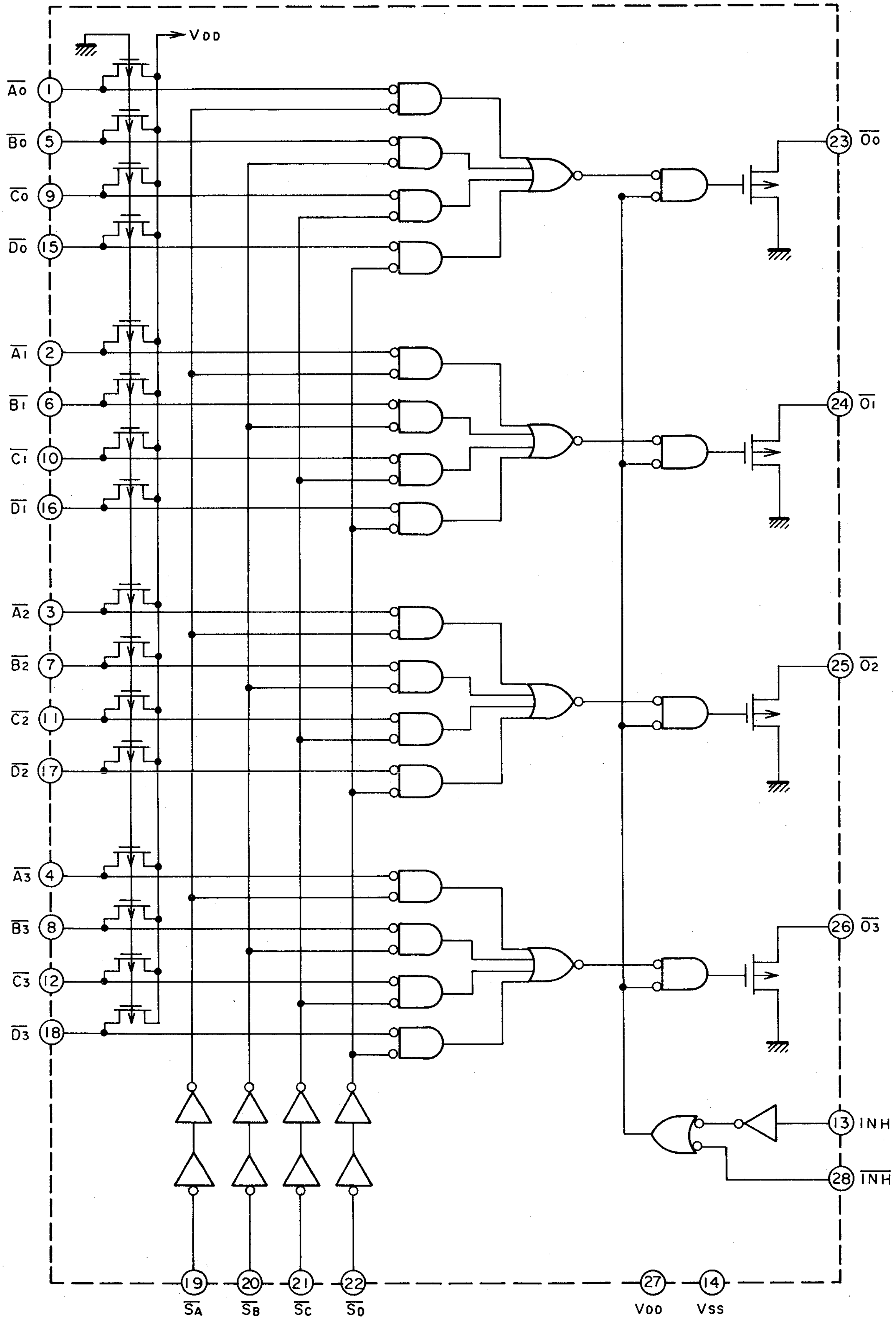
IC3 (LM6402H) Symbol			T3	T2	T1	T0	CTL
	IC3 Pin No.		11	10	9	8	19
		IC4, 5 (LC7800) Pin No.	19	20	21	22	13
D3	5	23	CAM DIRECTION ①	CrO_2 ⑤	* ⑨	IPLS ⑮	L
D2	4	24	FWD/REV ②	METAL ⑥	* ⑩	QUICK REV ⑯	L
D1	3	25	A.R FWD ③	TIMER PLAY	* ⑪		L
D0	2	26	A.R REV ④	TIMER REC	* ⑫		L

* OPERATION DATA = Refer to CONTROL DATA chart indicated next.
* ○ = IC5 Pin No.

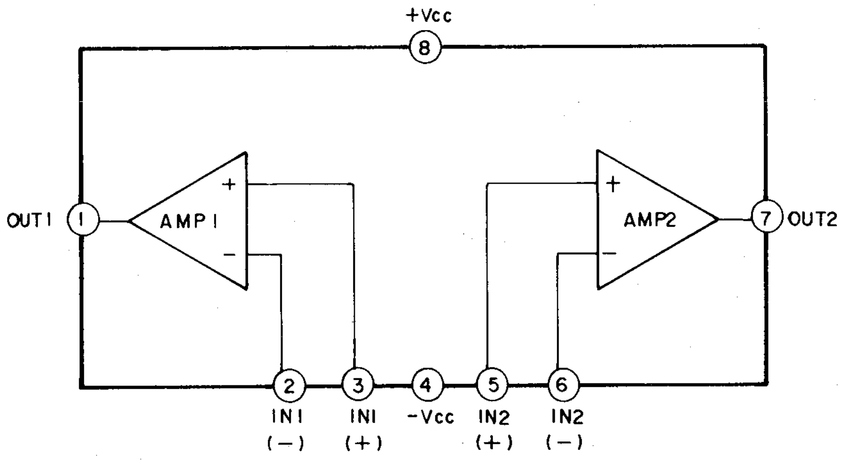
CONTROL DATA

Mode	Control Data Input				Mode	Control Data Input			
	D3	D2	D1	D0		D3	D2	D1	D0
STOP	0	0	0	0	AUTO MUTE	0	1	0	1
FF	0	0	0	1	REC FWD	0	1	1	0
REW	0	0	1	0	REV	1	0	1	1
FWD	0	0	1	1	REC REV	1	1	1	0
REC	0	1	0	0	NO OPERATION	1	1	1	1

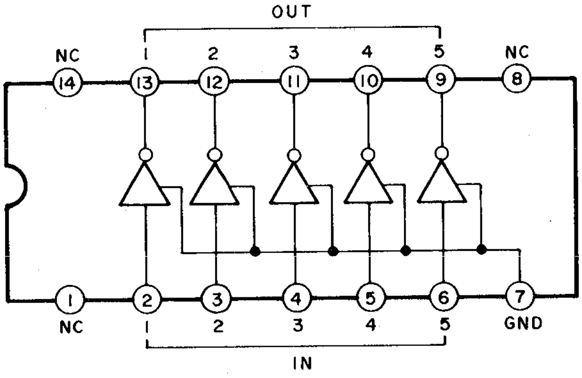
LC7800


VDD
$\overline{A_0}$ 1
$\overline{B_0}$ 5
$\overline{C_0}$ 9
$\overline{D_0}$ 15
$\overline{A_1}$ 2
$\overline{B_1}$ 6
$\overline{C_1}$ 10
$\overline{D_1}$ 16
$\overline{A_2}$ 3
$\overline{B_2}$ 7
$\overline{C_2}$ 11
$\overline{D_2}$ 17
$\overline{A_3}$ 4
$\overline{B_3}$ 8
$\overline{C_3}$ 12
$\overline{D_3}$ 18
23 $\overline{O_0}$
24 $\overline{O_1}$
25 $\overline{O_2}$
26 $\overline{O_3}$
13 INH
28 $\overline{INH}$
19 $\overline{S_A}$
20 $\overline{S_B}$
21 $\overline{S_C}$
22 $\overline{S_D}$
27 VDD
14 VSS

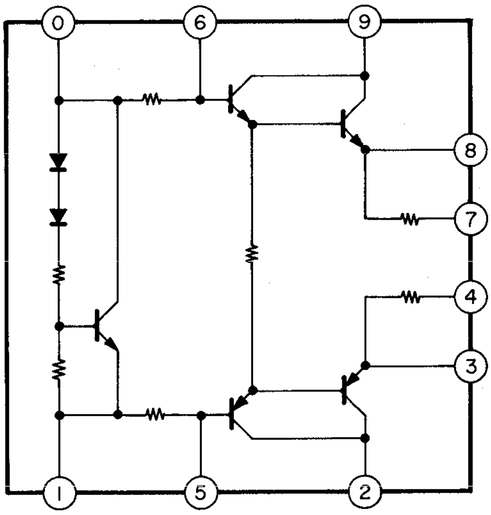
M5218LO, M5218P-21


+Vcc
8
OUT1
1
AMP1
+
−
AMP2
+
−
7
OUT2
2
3
4
5
6
IN1 (−)
IN1 (+)
−Vcc
IN2 (+)
IN2 (−)

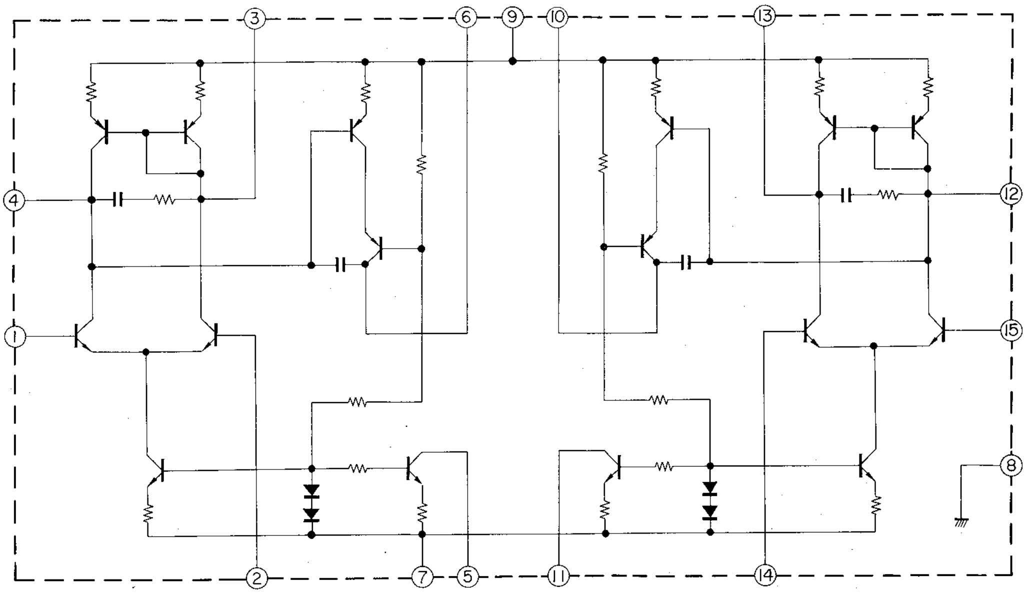
M54516


OUT
NC
1
2
3
4
5
NC
14
13
12
11
10
9
8
1
2
3
4
5
6
7
NC
1
2
3
4
5
GND
IN

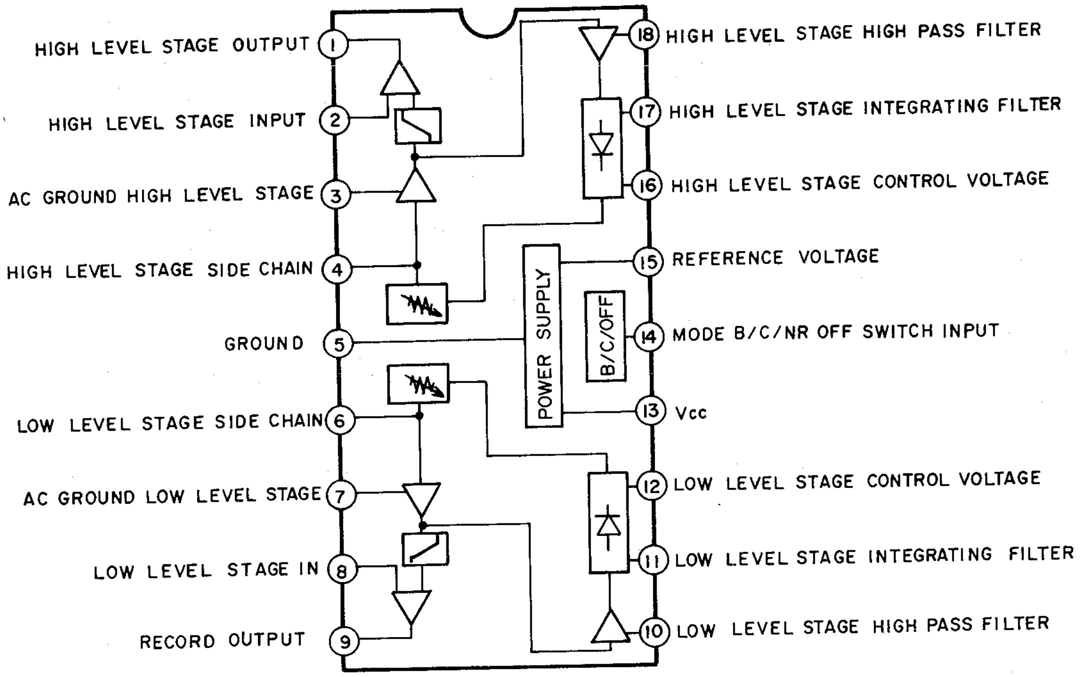
STK1050


0
6
9
8
7
4
3
1
5
2

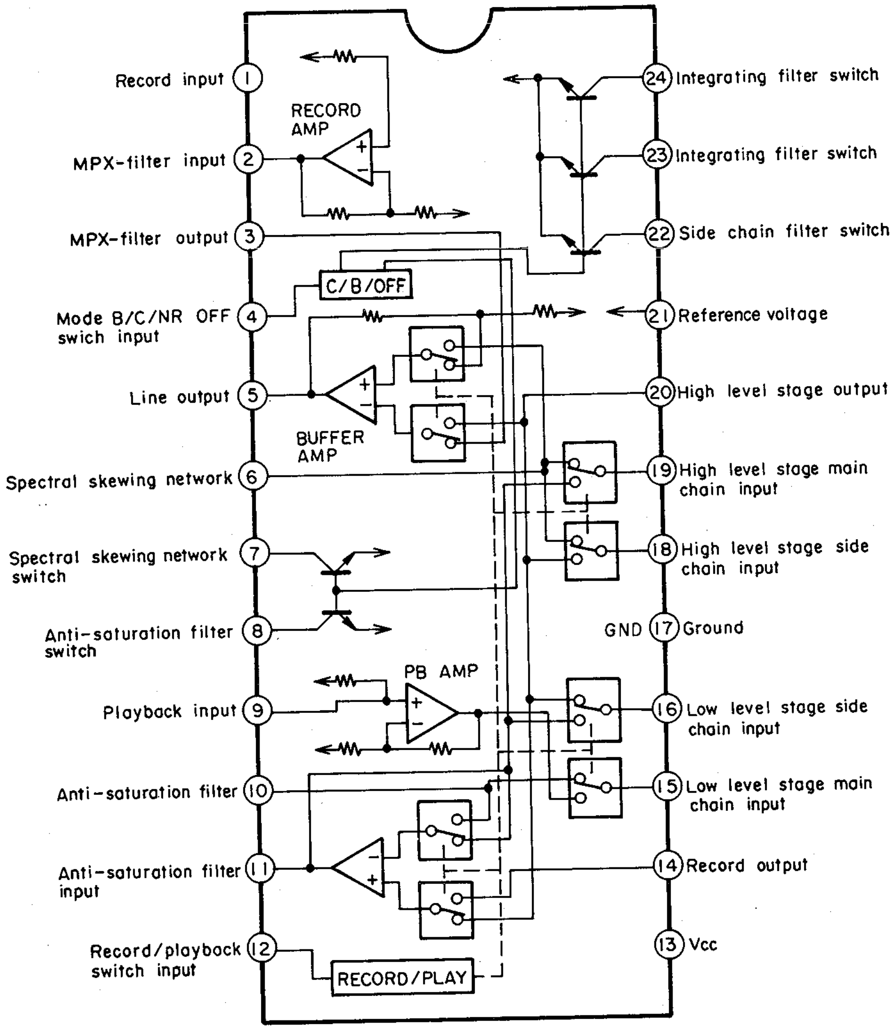
STK3042


3
6
9
10
13
4
1
12
15
8
2
7
5
11
14

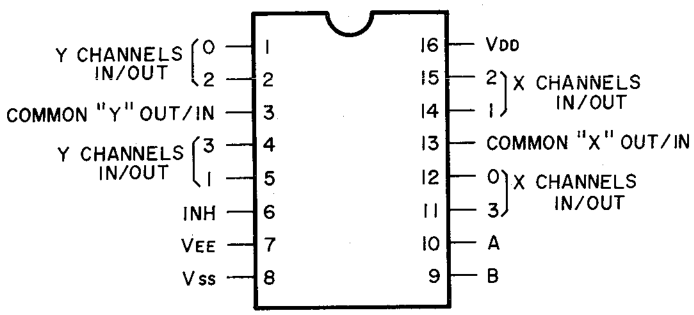
NE652


HIGH LEVEL STAGE OUTPUT
HIGH LEVEL STAGE INPUT
AC GROUND HIGH LEVEL STAGE
HIGH LEVEL STAGE SIDE CHAIN
GROUND
LOW LEVEL STAGE SIDE CHAIN
AC GROUND LOW LEVEL STAGE
LOW LEVEL STAGE IN
RECORD OUTPUT
HIGH LEVEL STAGE HIGH PASS FILTER
HIGH LEVEL STAGE INTEGRATING FILTER
HIGH LEVEL STAGE CONTROL VOLTAGE
REFERENCE VOLTAGE
MODE B/C/NR OFF SWITCH INPUT
Vcc
LOW LEVEL STAGE CONTROL VOLTAGE
LOW LEVEL STAGE INTEGRATING FILTER
LOW LEVEL STAGE HIGH PASS FILTER
POWER SUPPLY
B/C/OFF
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18

NE654

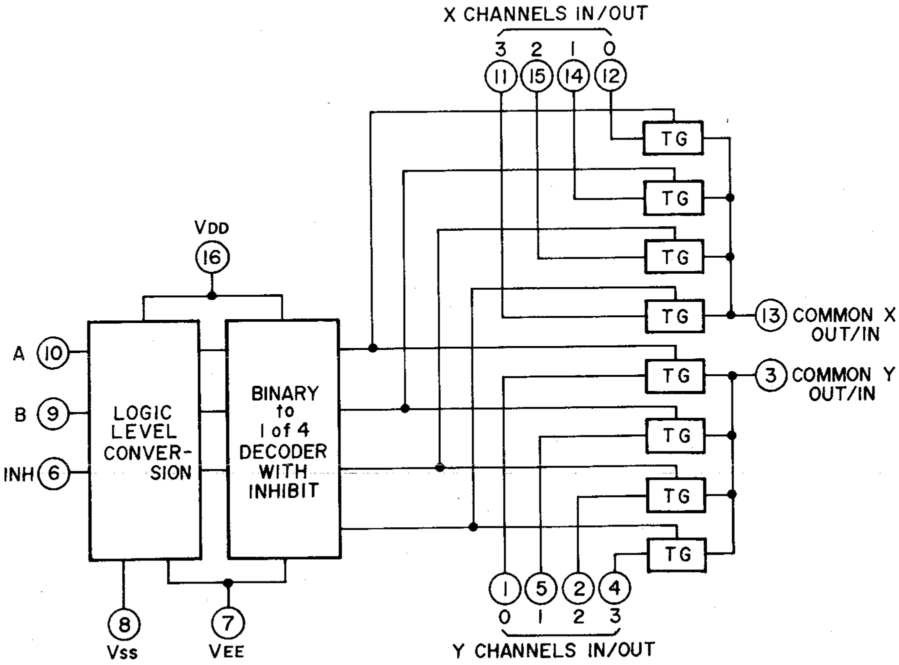

Record input
MPX-filter input
MPX-filter output
Mode B/C/NR OFF swich input
Line output
Spectral skewing network
Spectral skewing network switch
Anti-saturation filter switch
Playback input
Anti-saturation filter
Anti-saturation filter input
Record/playback switch input
Integrating filter switch
Integrating filter switch
Side chain filter switch
Reference voltage
High level stage output
High level stage main chain input
High level stage side chain input
GND
Ground
Low level stage side chain input
Low level stage main chain input
Record output
Vcc
RECORD AMP
C/B/OFF
BUFFER AMP
PB AMP
RECORD/PLAY
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

TC4052BP


Y CHANNELS IN/OUT 0
Y CHANNELS IN/OUT 2
COMMON "Y" OUT/IN
Y CHANNELS IN/OUT 3
Y CHANNELS IN/OUT 1
INH
VEE
Vss
1
2
3
4
5
6
7
8
16
15
14
13
12
11
10
9
VDD
2 X CHANNELS IN/OUT
1
COMMON "X" OUT/IN
0 X CHANNELS IN/OUT
3
A
B

INHIBIT ⑥	A ⑩	B ⑨	"ON" CHANNEL
L	L	L	0X, 0Y
L	H	L	1X, 1Y
L	L	H	2X, 2Y
L	H	H	3X, 3Y
H	X	X	NONE

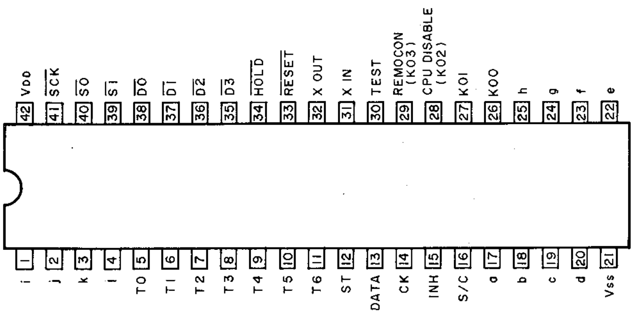
X=DON'T CARE


X CHANNELS IN/OUT
3
2
1
0
11
15
14
12
TG
TG
TG
TG
TG
TG
TG
TG
VDD
16
A
10
B
9
INH
6
LOGIC LEVEL CONVER-SION
BINARY to 1 of 4 DECODER WITH INHIBIT
13
COMMON X OUT/IN
3
COMMON Y OUT/IN
8
Vss
7
VEE
1
5
2
4
0
1
2
3
Y CHANNELS IN/OUT

FUNCTION (Analogue SW IC TC4052BP) Selection Signal

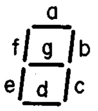
Output Function	A	B
PHONO	1	0
TUNER	0	1
AUX	1	1
TAPE	0	0

TC47C21P (NH-100)



VDD
$\overline{\text{SCK}}$
$\overline{\text{SO}}$
$\overline{\text{SI}}$
$\overline{\text{D0}}$
$\overline{\text{D1}}$
$\overline{\text{D2}}$
$\overline{\text{D3}}$
$\overline{\text{HOLD}}$
$\overline{\text{RESET}}$
X OUT
X IN
TEST
REMOCON (K03)
CPU DISABLE (K02)
K01
K00
h
g
f
e
42
41
40
39
38
37
36
35
34
33
32
31
30
29
28
27
26
25
24
23
22
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
i
j
k
l
T0
T1
T2
T3
T4
T5
T6
ST
DATA
CK
INH
S/C
a
b
c
d
Vss

TERMINAL DESCRIPTION OF IC1 TC47C21P (NH-100)

Pin No.	Symbol	Description
1	i	FLD Segment Data output
2	j	
3	k	
4	l	
5	T0	1G FLD Digit Designation output & Matrix Digit output
6	T1	2G
7	T2	3G
8	T3	4G
9	T4	5G
10	T5	6G
11	T6	7G
12	ST	Strobe Pulse for Electronic Volume (IC2: TC9154P) Control
13	DATA	Data Pulse
14	CK	Clock Pulse
15	INH	Key Input Inhibit signal input
16	S/C	START/CUT, produces a pulse when PHONO button is depressed.
17	a	FLD 7 Segment Data output 
18	b	
19	c	
20	d	
21	Vss	Connected to ground
22	e	FLD 7 Segment Data output
23	f	
24	g	
25	h	FLD Segment Data
26	K00	Key Matrix input
27	K01	
28	DISABLE (K02)	Key Input Inhibit signal output for IC2 TC47C20P (NH-20D)
29	REMOCON (K03)	Remote Control Data Pulse input
30	TEST	Connected to ground
31	XIN	X'tal oscillator (X1: 4.2 MHz) terminals
32	XOUT	

Pin No.	Symbol	Description
33	$\overline{\text{RESET}}$	Reset terminal
34	$\overline{\text{HOLD}}$	Back up Detection input
35	$\overline{\text{D3}}$	Control Data output for IC3 LM6402H-155, 190
36	$\overline{\text{D2}}$	
37	$\overline{\text{D1}}$	
38	$\overline{\text{D0}}$	
39	$\overline{\text{SI}}$	Input — Serial Data between IC2 TC47C20P (NH-200)
40	$\overline{\text{SO}}$	Output
41	$\overline{\text{SCK}}$	Clock
42	V_{DD}	+5 V

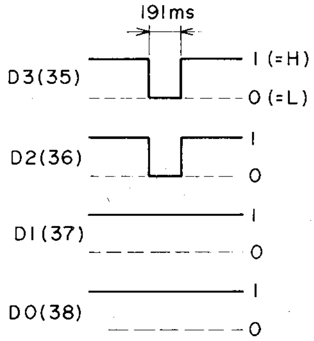
KEY INPUT MATRIX (FLD DIGIT Designation & Matrix Digit output)

Symbol (Pin No.) Symbol (Pin No.)	T6 (11)	T5 (10)	T4 (9)	T3 (8)	T2 (7)	T1 (6)	T0 (5)
K0 (26)	REC/PB	DISK END	FWD/REV	24h/12h	MIN	HOUR	TIMER ON/OFF
K1 (27)	SLEEP	TUNER REC	TAPE PLAY	TUNER PLAY	ON TIMER-SET	OFF TIMER-SET	CLOCK SET

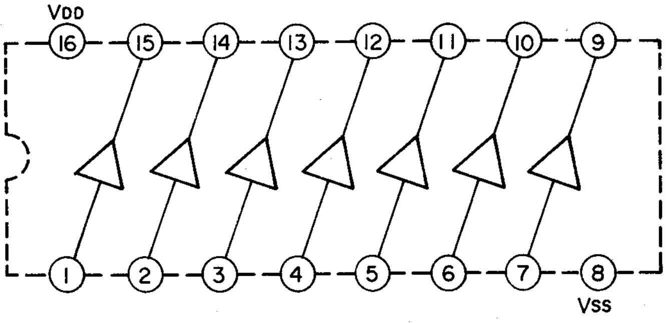
CONTROL DATA for IC3 LM6402H-155, 190

IC Pin & Symbol Function	35 D3	36 D2	37 D1	38 D0
STOP	0	0	0	0
FF	0	0	0	1
RWD	0	0	1	0
FWD	0	0	1	1
REC	0	1	0	0
REC MUTE	0	1	0	1
REC PWD	0	1	1	0
REV	1	0	1	1
REC REV	1	1	1	0

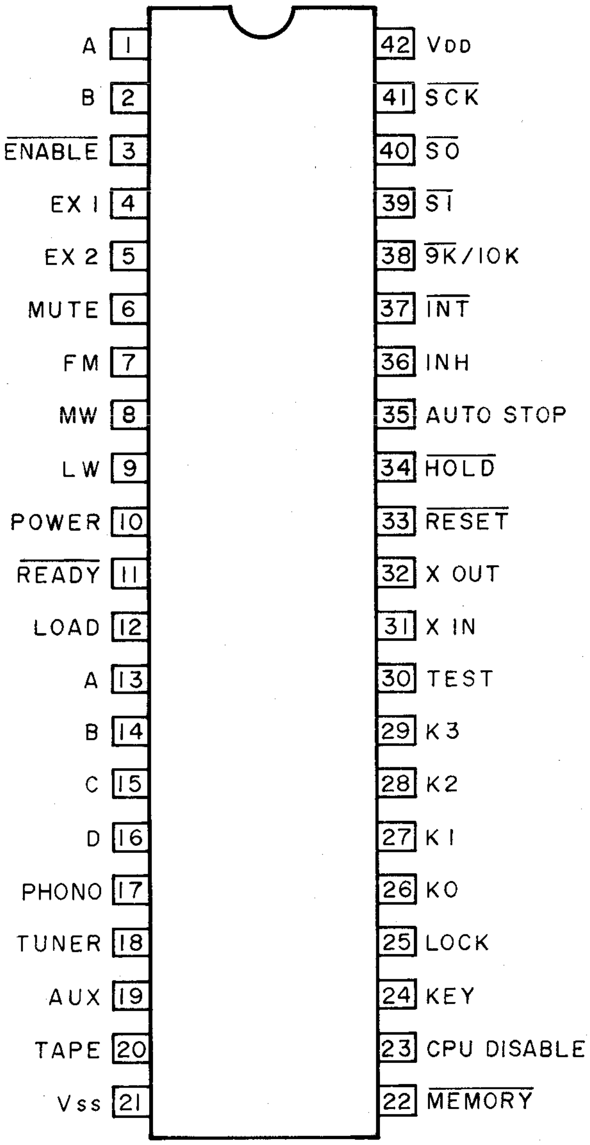
(ex) FWD



TC5066BP


VDD
16
15
14
13
12
11
10
9
1
2
3
4
5
6
7
8
Vss

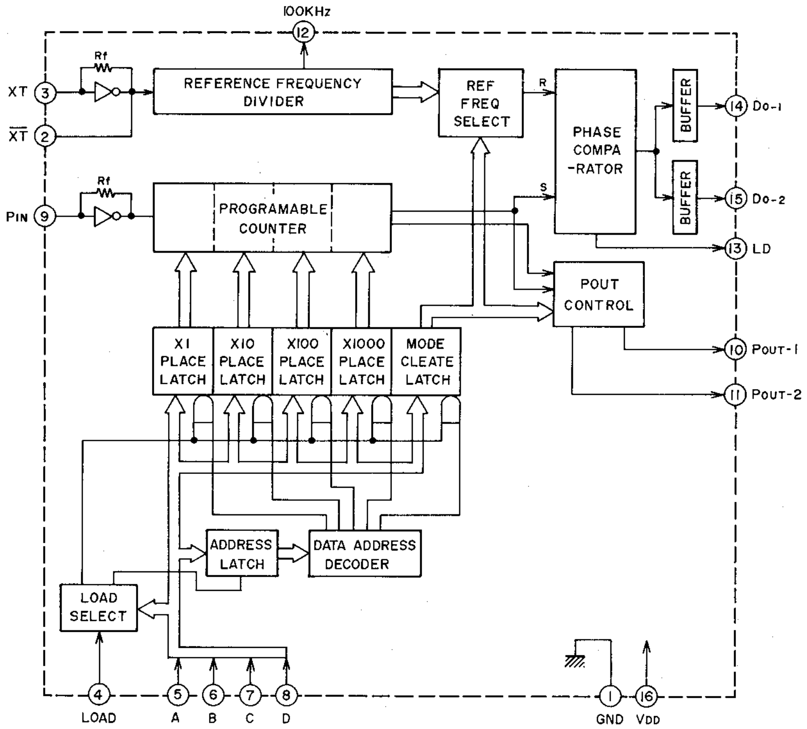
TC47C21P (NH-200)


A 1
B 2
$\overline{ENABLE}$ 3
EX 1 4
EX 2 5
MUTE 6
FM 7
MW 8
LW 9
POWER 10
$\overline{READY}$ 11
LOAD 12
A 13
B 14
C 15
D 16
PHONO 17
TUNER 18
AUX 19
TAPE 20
Vss 21
42 VDD
41 $\overline{SCK}$
40 $\overline{SO}$
39 $\overline{SI}$
38 $\overline{9K}$/10K
37 $\overline{INT}$
36 INH
35 AUTO STOP
34 $\overline{HOLD}$
33 $\overline{RESET}$
32 X OUT
31 X IN
30 TEST
29 K3
28 K2
27 K1
26 K0
25 LOCK
24 KEY
23 CPU DISABLE
22 $\overline{MEMORY}$

TERMINAL DESCRIPTION OF IC2 TC47C20P (NH-200)

Pin No.	Symbol	Description	
1	A	Function (Analogue SW) Selection signal output for IC2 (TC4052BP)	
2	B		
3	$\overline{\mathrm{ENABLE}}$	Not used and connected to +5 V line	
4	EX1	Not used and connector to +5 V line	
5	EX2		
6	MUTE	Tuner Section Audio Mute output, active at “H”	
7	FM	Band Selection Data output, active at “H”	
8	MW		
9	LW		
10	POWER	Power Relay (RL1) Drive output, active at “H”	
11	$\overline{\mathrm{READY}}$	Not used and connected to +5 V line	
12	LOAD	PLL Data Write signal (PLL Load signal)	
13	A	PLL Frequency Data output for PLL IC (IC5: TC9125BP)	
14	B		
15	C		
16	D		
17	PHONO	Function Display, lit at “H”	
18	TUNER		
19	AUX		
20	TAPE		
21	VSS	Connected to ground	
22	$\overline{\mathrm{MEMORY}}$	MEMORY (FLD) Display Drive, lit at “L”	
23	DISABLE	Key Input inhibit signal output for IC1 TC47C21P (NH-101) active at “H”	
24	KEY	Key Input Common signal output	
25	LOCK	Key Input Lock [K0 (2/3 Band), K2 (FM Band Upper/Lower), K3 (FM Step 50kHz/100kHz)]	
26	K0	DOWN	Key Input, active at “H”
27	K1	UP	
28	K2	BAND	
29	K3	MEMORY	
30	TEST	Connected to ground	
31	XIN	X’tal oscillator terminals	
32	XOUT		
33	$\overline{\mathrm{RESET}}$	Reset terminal	
34	$\overline{\mathrm{HOLD}}$	Back-up Detection	
35	AUTO STOP	AUTO STOP Detection input, AUTO STOP at “H”	
36	INH	Key Input inhibit signal input, active “H”	
37	$\overline{\mathrm{INT}}$	Connected to 5V line	
38	$\overline{\mathrm{9K}}$/10K	AM 9 kHz/10 kHz STEP Selection input, 9 kHz at “L” & 10 kHz at “H”	
39	$\overline{\mathrm{SI}}$	Input	Serial Data between IC1 TC47C21P (NH-100)
40	$\overline{\mathrm{SO}}$	Output	
41	$\overline{\mathrm{SCK}}$	Clock	
42	VDD	+5 V	

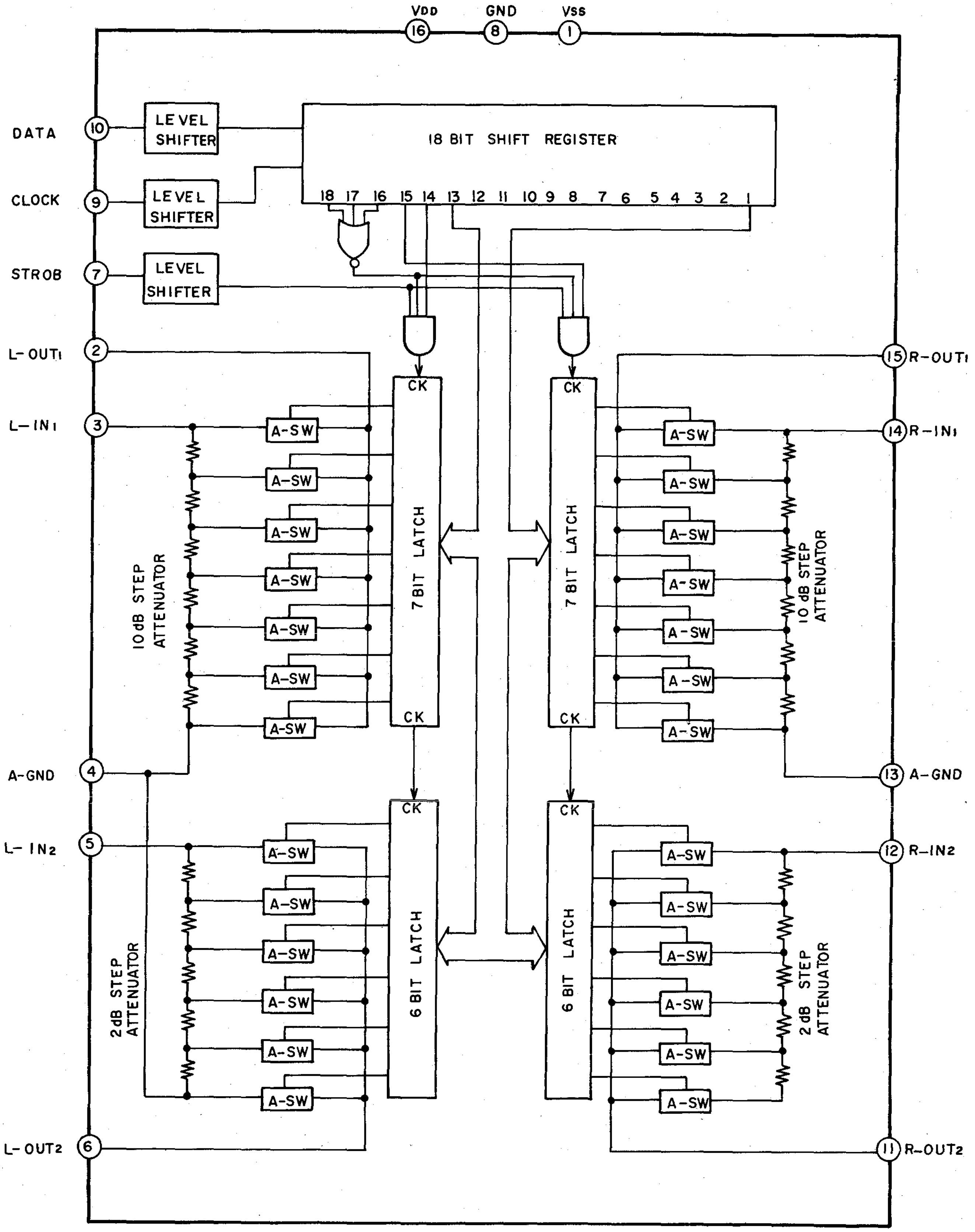
TC9125BP


100KHz
12
Rf
XT 3
$\overline{XT}$ 2
REFERENCE FREQUENCY DIVIDER
REF FREQ SELECT
R
PHASE COMPA-RATOR
S
BUFFER
BUFFER
14 Do-1
15 Do-2
13 LD
Rf
PIN 9
PROGRAMABLE COUNTER
POUT CONTROL
X1 PLACE LATCH
X10 PLACE LATCH
X100 PLACE LATCH
X1000 PLACE LATCH
MODE CLEATE LATCH
10 POUT-1
11 POUT-2
ADDRESS LATCH
DATA ADDRESS DECODER
LOAD SELECT
4 LOAD
5 A
6 B
7 C
8 D
1 GND
16 VDD

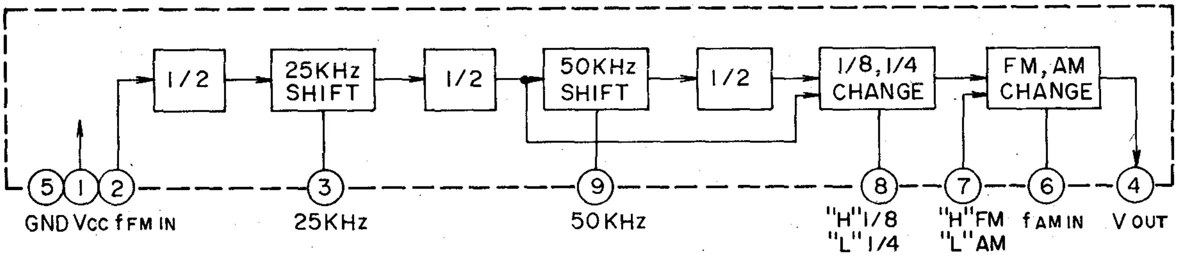
TERMINAL DESCRIPTION OF IC5 TC9125BP

Pin No.	Symbol	Designation of terminal	Description of functions and operations
1	GND	Earth terminal	
2	$\overline{XT}$	Crystal oscillator connection terminal	Connection of 9.0MHz crystal oscillator.
3	XT		
4	LOAD	Load input terminal	Data reading instruction input terminal for A, B, C and D. Data is read when this terminal is at "H" level, but when at "L" level, the previous data is held regardless of other inputs.
5	A	Program/data input terminals	Input terminal for reference frequency selection data and programmable counter division digit data.
6	B		
7	C		
8	D		
9	PIN	Programmable counter input terminals	
10	POUT-1	Programmable counter output terminal	To be connected to the prescaler TD6102P for fine adjustment of IF frequency in FM or for 50 kHz shift in Europe. The signal of Pout-1 and Pout-2 is output at the point of different phase. * Pout-2 is not used (No connection)
11	POUT-2		
12	100 kHz	100 kHz clock output terminal	Not used (No connection)
13	LD	Lock-out detection terminal	Not used (No connection)
14	Do-1	Phase comparator output terminal	To be connected to low-pass filter.
15	Do-2		
16	VDD	Power terminal	+5 V

TC9154P

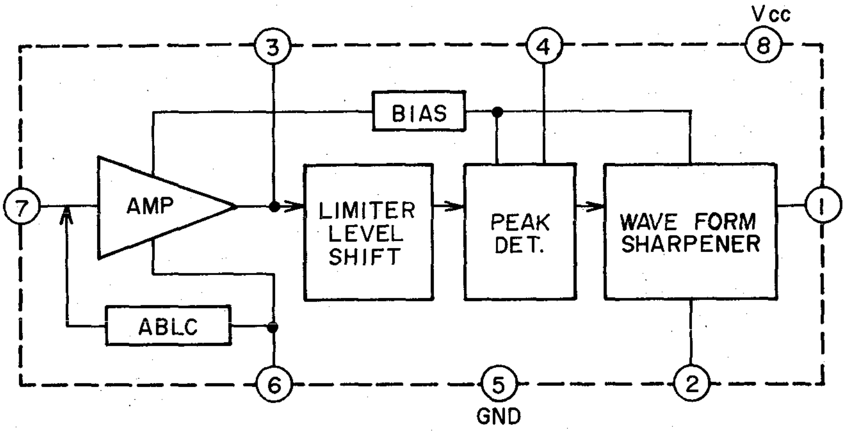

VDD
GND
VSS
16
8
1
DATA 10
CLOCK 9
STROB 7
L-OUT1 2
L-IN1 3
A-GND 4
L-IN2 5
L-OUT2 6
15 R-OUT1
14 R-IN1
13 A-GND
12 R-IN2
11 R-OUT2
LEVEL SHIFTER
LEVEL SHIFTER
LEVEL SHIFTER
18 BIT SHIFT REGISTER
18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
CK
7 BIT LATCH
6 BIT LATCH
A-SW
10 dB STEP ATTENUATOR
2 dB STEP ATTENUATOR

TD6102P

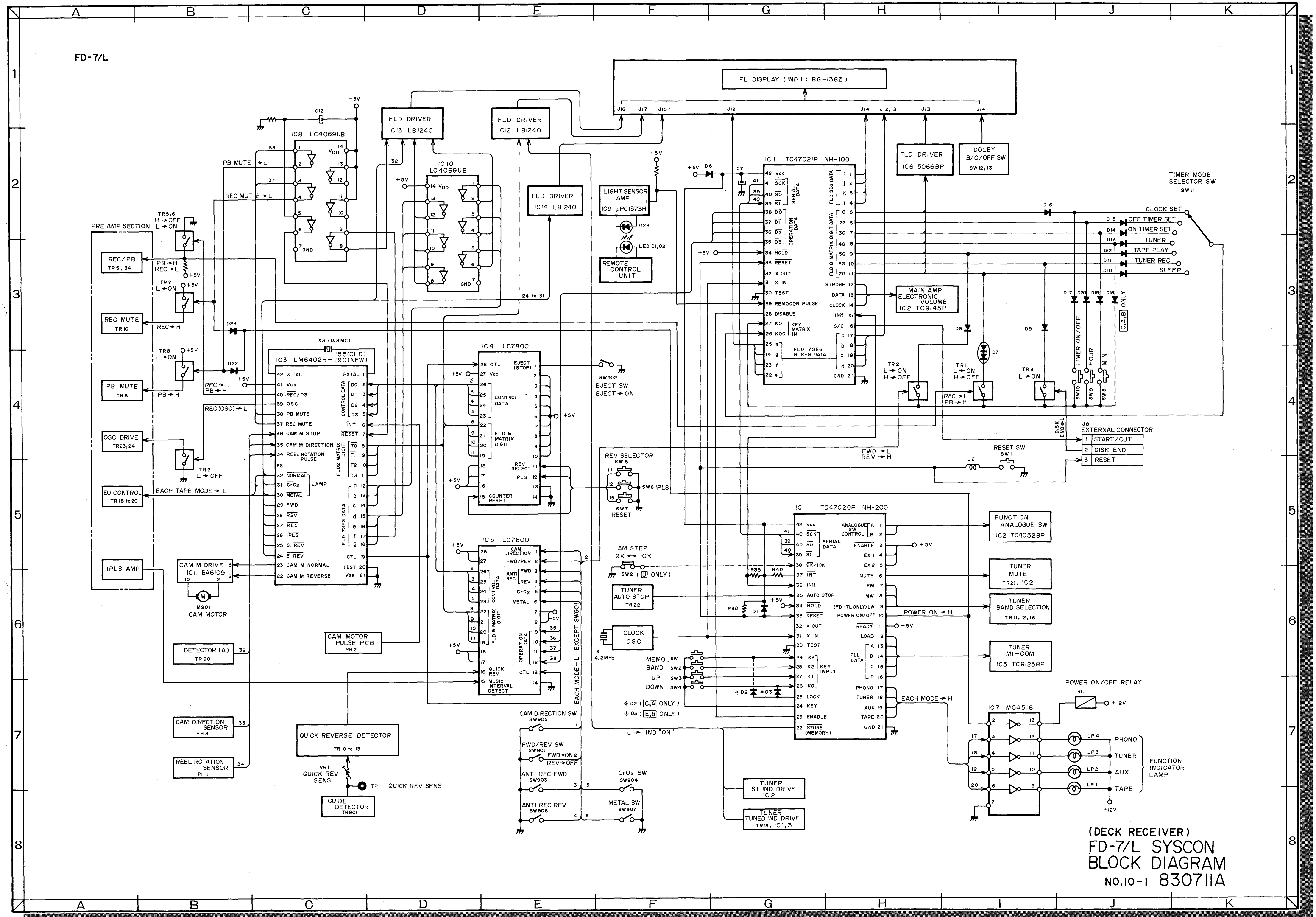


1/2
25KHz SHIFT
1/2
50KHz SHIFT
1/2
1/8, 1/4 CHANGE
FM, AM CHANGE
5
1
2
3
9
8
7
6
4
GND
Vcc
fFM IN
25KHz
50KHz
"H" 1/8
"L" 1/4
"H" FM
"L" AM
fAM IN
V OUT

μPC1373H



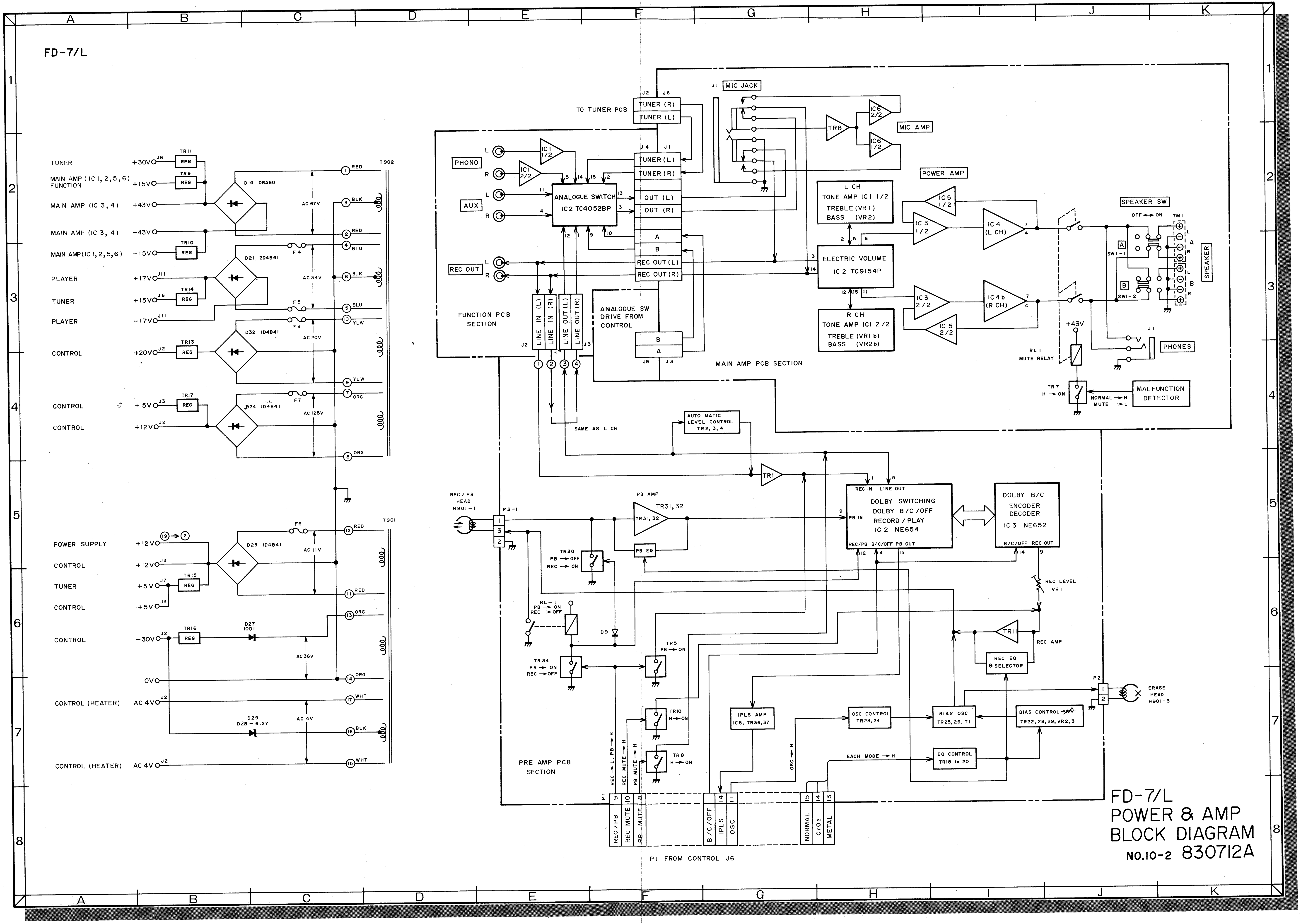
Vcc
3
4
8
BIAS
7
AMP
LIMITER LEVEL SHIFT
PEAK DET.
WAVE FORM SHARPENER
1
ABLC
6
5
2
GND


FD-7/L
FL DISPLAY (IND1 : BG-138Z)
J16 J17 J15 J12 J14 J12,13 J13 J14
FLD DRIVER IC13 LB1240
FLD DRIVER IC12 LB1240
FLD DRIVER IC14 LB1240
FLD DRIVER IC6 5066BP
DOLBY B/C/OFF SW SW12,13
IC8 LC4069UB
IC10 LC4069UB
LIGHT SENSOR AMP IC9 μPC1373H
D28
LED 01,02
REMOTE CONTROL UNIT
IC1 TC47C21P NH-100
TIMER MODE SELECTOR SW SW11
CLOCK SET
OFF TIMER SET
ON TIMER SET
TUNER
TAPE PLAY
TUNER REC
SLEEP
MAIN AMP ELECTRONIC VOLUME IC2 TC9145P
PRE AMP SECTION
REC/PB TR5,34
REC MUTE TR10
PB MUTE TR8
OSC DRIVE TR23,24
EQ CONTROL TR18 to 20
IPLS AMP
PB MUTE → L
REC MUTE → L
EACH TAPE MODE → L
IC3 LM6402H-155(OLD) 190(NEW)
X3 (0.8MC)
IC4 LC7800
IC5 LC7800
SW902 EJECT SW EJECT → ON
REV SELECTOR SW5
SW6 IPLS
SW7 RESET
J8 EXTERNAL CONNECTOR
1 START/CUT
2 DISK END
3 RESET
RESET SW SW1
FWD → L
REV → H
IC TC47C20P NH-200
AM STEP 9K ↔ 10K
SW2 (U ONLY)
TUNER AUTO STOP TR22
CLOCK OSC
X1 4.2MHz
MEMO SW1
BAND SW2
UP SW3
DOWN SW4
*D2 (C,A ONLY)
*D3 (E,B ONLY)
FUNCTION ANALOGUE SW IC2 TC4052BP
TUNER MUTE TR21, IC2
TUNER BAND SELECTION TR11,12,16
TUNER MI-COM IC5 TC9125BP
POWER ON → H
EACH MODE → H
POWER ON/OFF RELAY RL1
IC7 M54516
PHONO
TUNER
AUX
TAPE
FUNCTION INDICATOR LAMP
CAM M DRIVE IC11 BA6109
M901 CAM MOTOR
DETECTOR (A) TR901
CAM MOTOR PULSE PCB PH2
CAM DIRECTION SENSOR PH3
REEL ROTATION SENSOR PH1
QUICK REVERSE DETECTOR TR10 to 13
VR1 QUICK REV SENS
TP1 QUICK REV SENS
GUIDE DETECTOR TR901
CAM DIRECTION SW SW905
FWD/REV SW SW901
ANTI REC FWD SW903
ANTI REC REV SW906
CrO2 SW SW904
METAL SW SW907
EACH MODE-L EXCEPT SW901
L → IND "ON"
TUNER ST IND DRIVE IC2
TUNER TUNED IND DRIVE TR13, IC1,3

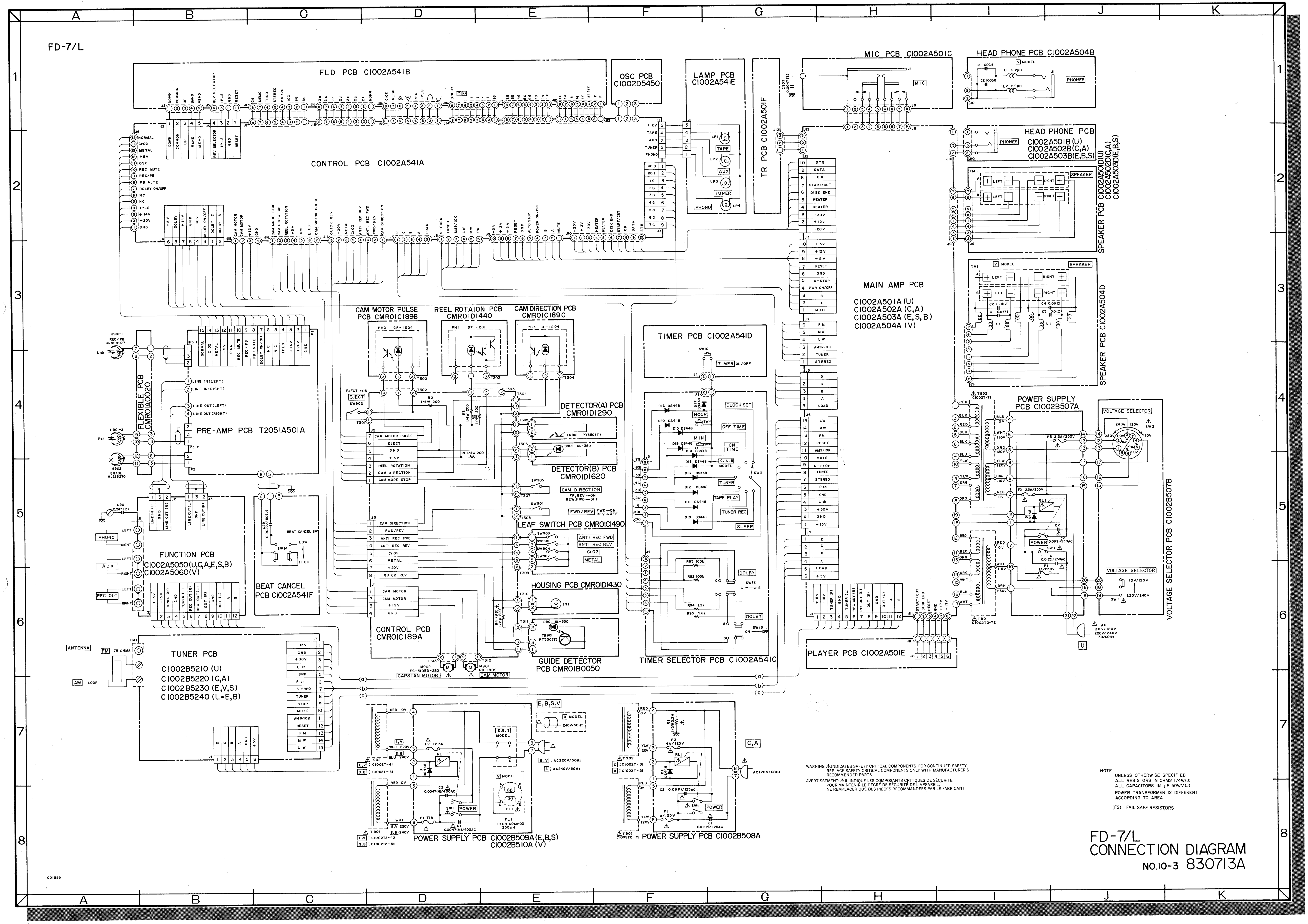
(DECK RECEIVER)

FD-7/L SYSCON BLOCK DIAGRAM

NO.10-1 830711A


FD-7/L
A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
8
TUNER
+30V
J6
TR11
REG
MAIN AMP (IC 1, 2, 5, 6)
FUNCTION
+15V
TR9
MAIN AMP (IC 3, 4)
+43V
D14 DBA60
-43V
MAIN AMP (IC 1, 2, 5, 6)
-15V
TR10
AC 67V
RED
BLK
T902
D21 2D4B41
F4
BLU
PLAYER
+17V
J11
AC 34V
TUNER
+15V
TR14
F5
PLAYER
-17V
YLW
F8
D32 1D4B41
CONTROL
+20V
J2
TR13
AC 20V
ORG
CONTROL
+5V
J3
TR17
D24 1D4B41
F7
AC 125V
CONTROL
+12V
POWER SUPPLY
+12V
19 → 2
F6
D25 1D4B41
AC 11V
T901
CONTROL
+12V
TUNER
+5V
J7
TR15
CONTROL
+5V
CONTROL
-30V
TR16
D27
10D1
AC 36V
0V
CONTROL (HEATER)
AC 4V
WHT
D29
DZB-6.2Y
AC 4V
CONTROL (HEATER)
AC 4V
TO TUNER PCB
J2
J6
TUNER (R)
TUNER (L)
J1
MIC JACK
IC6
2/2
TR8
MIC AMP
PHONO
L
R
IC1
1/2
IC1
2/2
J4
TUNER (L)
TUNER (R)
POWER AMP
AUX
ANALOGUE SWITCH
IC2 TC4052BP
OUT (L)
OUT (R)
L CH
TONE AMP IC1 1/2
TREBLE (VR1)
BASS (VR2)
IC5
1/2
IC3
1/2
IC4
(L CH)
SPEAKER SW
OFF ↔ ON
TM1
A
B
REC OUT (L)
REC OUT (R)
REC OUT
ELECTRIC VOLUME
IC2 TC9154P
SW1-1
SW1-2
SPEAKER
FUNCTION PCB
SECTION
ANALOGUE SW
DRIVE FROM
CONTROL
R CH
TONE AMP IC1 2/2
TREBLE (VR1 b)
BASS (VR2b)
IC3
2/2
IC4b
(R CH)
IC5
2/2
+43V
LINE IN (L)
LINE IN (R)
LINE OUT (L)
LINE OUT (R)
J2
J3
J9
J3
MAIN AMP PCB SECTION
RL1
MUTE RELAY
PHONES
TR7
H → ON
NORMAL → H
MUTE → L
MALFUNCTION
DETECTOR
SAME AS L CH
AUTO MATIC
LEVEL CONTROL
TR2, 3, 4
TR1
REC IN
LINE OUT
DOLBY SWITCHING
DOLBY B/C/OFF
RECORD / PLAY
IC 2 NE654
PB IN
REC/PB
B/C/OFF
PB OUT
DOLBY B/C
ENCODER
DECODER
IC3 NE652
B/C/OFF
REC OUT
REC / PB
HEAD
H901-1
P3-1
PB AMP
TR31, 32
PB EQ
TR30
PB → OFF
REC → ON
REC LEVEL
VR1
RL-1
PB → ON
REC → OFF
D9
TR5
PB → ON
TR11
REC AMP
REC EQ
& SELECTOR
TR34
PB → ON
REC → OFF
P2
ERASE
HEAD
H901-3
TR10
H → ON
IPLS AMP
IC5, TR36, 37
OSC CONTROL
TR23, 24
BIAS OSC
TR25, 26, T1
BIAS CONTROL
TR22, 28, 29, VR2, 3
TR8
H → ON
EACH MODE → H
EQ CONTROL
TR18 to 20
PRE AMP PCB
SECTION
REC → L, PB → H
REC MUTE → H
PB MUTE → H
OSC → H
P1
REC / PB
REC MUTE
PB MUTE
B/C/OFF
IPLS
OSC
NORMAL
CrO2
METAL
P1 FROM CONTROL J6

FD-7/L
POWER & AMP
BLOCK DIAGRAM
NO.10-2 830712A


FD-7/L
FLD PCB C1002A541B
OSC PCB C1002D5450
LAMP PCB C1002A541E
TR PCB C1002A501F
MIC PCB C1002A501C
HEAD PHONE PCB C1002A504B
HEAD PHONE PCB C1002A501B(U) C1002A502B(C,A) C1002A503B(E,B,S)
CONTROL PCB C1002A541A
SPEAKER PCB C1002A501D(U) C1002A502D(C,A) C1002A503D(E,B,S)
SPEAKER PCB C1002A504D
MAIN AMP PCB C1002A501A(U) C1002A502A(C,A) C1002A503A(E,S,B) C1002A504A(V)
FLEXIBLE PCB CMR01A0020
PRE-AMP PCB T2051A501A
CAM MOTOR PULSE PCB CMR01C1898
REEL ROTAION PCB CMR01D1440
CAM DIRECTION PCB CMR01C189C
TIMER PCB C1002A541D
DETECTOR(A) PCB CMR01D1290
DETECTOR(B) PCB CMR01D1620
LEAF SWITCH PCB CMR01C1490
HOUSING PCB CMR01D1430
GUIDE DETECTOR PCB CMR01B0050
CONTROL PCB CMR01C189A
FUNCTION PCB C1002A5050(U,C,A,E,S,B) C1002A5060(V)
BEAT CANCEL PCB C1002A541F
TIMER SELECTOR PCB C1002A541C
POWER SUPPLY PCB C1002B507A
VOLTAGE SELECTOR PCB C1002B507B
PLAYER PCB C1002A501E
TUNER PCB C1002B5210(U) C1002B5220(C,A) C1002B5230(E,V,S) C1002B5240(L=E,B)
POWER SUPPLY PCB C1002B509A(E,B,S) C1002B510A(V)
POWER SUPPLY PCB C1002B508A
CAPSTAN MOTOR
CAM MOTOR
ANTENNA
PHONO
AUX
REC OUT
PHONES
VOLTAGE SELECTOR
001359

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

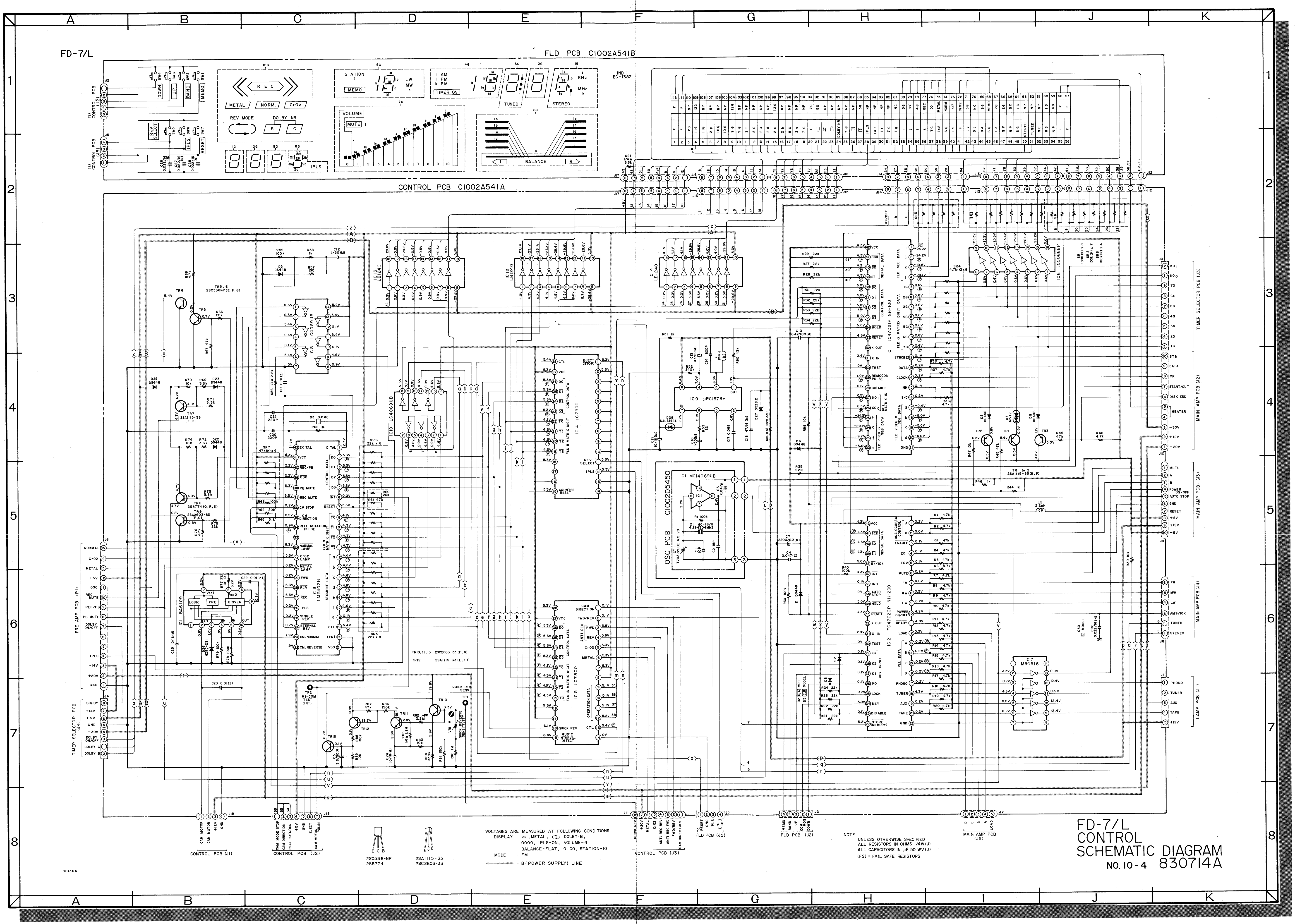
AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50WV(J)
POWER TRANSFORMER IS DIFFERENT ACCORDING TO AREA

(FS) = FAIL SAFE RESISTORS

FD-7/L
CONNECTION DIAGRAM

NO.10-3 830713A


FD-7/L
FLD PCB C1002A541B
CONTROL PCB C1002A541A
TO CONTROL PCB (J2)
TO CONTROL PCB (J5)
DOWN
UP
BAND
MEMO
REV SELECT
IPLS
RESET
REC
METAL
NORM.
CrO2
REV MODE
DOLBY NR
STATION
MEMO
LW
MW
AM
PM
FM
TIMER ON
KHz
MHz
TUNED
STEREO
VOLUME
MUTE
BALANCE
IPLS
IND : BG-138Z
IC13 LB1240
IC12 LB1240
IC14 LB1240
IC8 LC4069UB
IC10 LC4069UB
IC3 LM6402H
IC4 LC7800
IC5 LC7800
IC9 μPC1373H
IC1 TC47C21P NH-100
IC6 TC5066BP
IC2 TC47C20P NH-200
IC7 M54516
IC11 BA6109
OSC PCB C1002D5450
IC1 MC14069UB
X1 HC-18/U 4.194304MHz
X3 0.8MC
TR5,6 2SC536NP(E,F,G)
TR7 2SA1115-33 (E,F)
TR8 2SB774(Q,R,S)
TR9 2SC2603-33 (F,G)
TR10,11,13 2SC2603-33 (F,G)
TR12 2SA1115-33 (E,F)
TR1 to 2 2SA1115-33(E,F)
TP2 MI-COM TEST (INT)
TP1 QUICK REV SENS
PRE AMP PCB (P1)
TIMER SELECTOR PCB (J4)
TIMER SELECTOR PCB (J3)
MAIN AMP PCB (J2)
MAIN AMP PCB (J3)
MAIN AMP PCB (J4)
LAMP PCB (J1)
PHONO
TUNER
AUX
TAPE
CAM MOTOR
CAM MOTOR
+12V
GND
CONTROL PCB (J1)
CAM MODE STOP
CAM DIRECTION
REEL ROTATION
+5V
GND
EJECT
CAM MOTOR PULSE
CONTROL PCB (J2)
QUICK REV
+20V
METAL
CrO2
ANTI REC REV
ANTI REC FWD
FWD/REV
CAM DIRECTION
CONTROL PCB (J3)
RESET
GND
IPLS
FLD PCB (J5)
MEMO
BAND
UP
COMMON
DOWN
FLD PCB (J2)
D
C
B
A
LOAD
MAIN AMP PCB (J5)
2SC536-NP
2SB774
2SA1115-33
2SC2603-33
001364

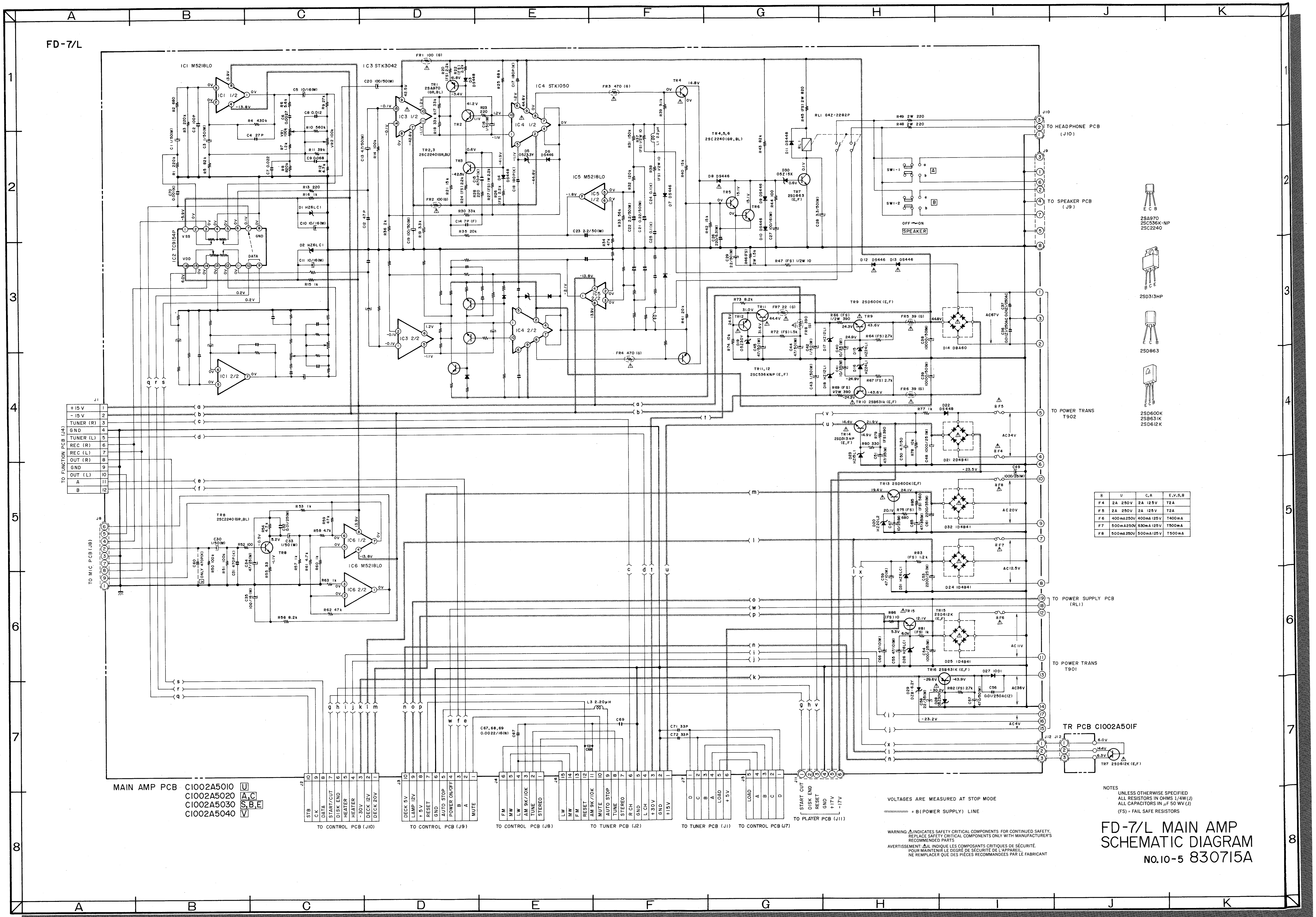
VOLTAGES ARE MEASURED AT FOLLOWING CONDITIONS
DISPLAY : >>, METAL, ⊂⊃ DOLBY-B,
0000, IPLS-ON, VOLUME-4
BALANCE-FLAT, 0:00, STATION-10
MODE : FM

▭ = B(POWER SUPPLY) LINE

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50 WV(J)
(FS) = FAIL SAFE RESISTORS

FD-7/L CONTROL SCHEMATIC DIAGRAM

NO. 10-4 830714A


FD-7/L
IC1 M5218L0
IC2 TC9154P
IC3 STK3042
IC4 STK1050
IC5 M5218L0
IC6 M5218L0
TR1 2SA970 (GR,BL)
TR2,3 2SC2240(GR,BL)
TR4,5,6 2SC2240(GR,BL)
TR7 2SD863 (E,F)
TR8 2SC2240(GR,BL)
TR9 2SD600K(E,F)
TR10 2SB631K(E,F)
TR11,12 2SC536KNP (E,F)
TR13 2SD600K(E,F)
TR14 2SD313HP (E,F)
TR15 2SD612K (E,F)
TR16 2SB631K (E,F)
RL1 G42-2282P
D14 D8A60
D21 1D4B41
D24 1D4B41
D25 1D4B41
D32 1D4B41
J1
J8
J9
J10
J12
TO HEADPHONE PCB (J10)
TO SPEAKER PCB (J9)
TO POWER TRANS T902
TO POWER SUPPLY PCB (RL1)
TO POWER TRANS T901
TR PCB C1002A501F
TR7 2SD612K (E,F)
TO FUNCTION PCB (J4)
TO MIC PCB (J8)
+15V
-15V
TUNER (R)
GND
TUNER (L)
REC (R)
REC (L)
OUT (R)
GND
OUT (L)
A
B
SW1-1
SW1-2
OFF ⟷ ON
SPEAKER
AC67V
AC34V
AC20V
AC12.5V
AC11V
AC36V
AC4V
STB
CK
DATA
START/CUT
DISK END
HEATER
HEATER
-30V
DECK 12V
DECK 20V
TO CONTROL PCB (J10)
DECK 5V
LAMP 12V
+5V
RESET
GND
AUTO STOP
POWER ON/OFF
B
A
MUTE
TO CONTROL PCB (J9)
FM
MW
LW
AM 9K/10K
TUNE
STEREO
TO CONTROL PCB (J8)
LW
MW
FM
RESET
AM 9K/10K
MUTE
AUTO STOP
TUNE
STEREO
R CH
GND
L CH
+30V
GND
+15V
TO TUNER PCB (J2)
D
C
B
A
LOAD
+5V
TO TUNER PCB (J1)
LOAD
A
B
C
D
TO CONTROL PCB (J7)
START CUT
DISK END
RESET
GND
+17V
-17V
TO PLAYER PCB (J11)
E C B
2SA970
2SC536K-NP
2SC2240
B C E
2SD313HP
2SD863
2SD600K
2SB631K
2SD612K
A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
8

MAIN AMP PCB C1002A5010 U
C1002A5020 A,C
C1002A5030 S,B,E
C1002A5040 V

※	U	C,A	E,V,S,B
F4	2A 250V	2A 125V	T2A
F5	2A 250V	2A 125V	T2A
F6	400mA250V	400mA125V	T400mA
F7	500mA250V	630mA125V	T500mA
F8	500mA250V	500mA125V	T500mA

VOLTAGES ARE MEASURED AT STOP MODE

= B(POWER SUPPLY) LINE

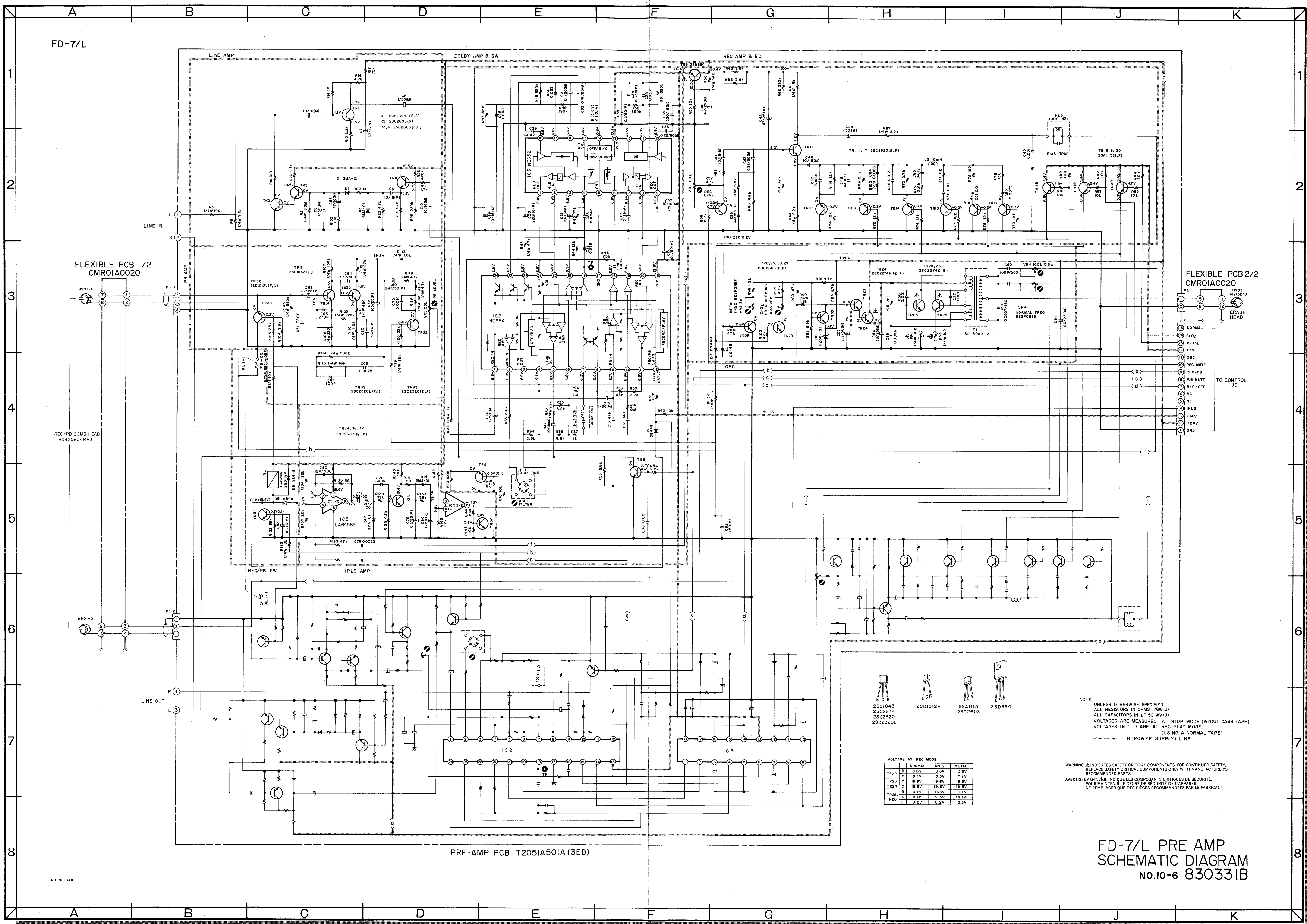
WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY,
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL,
NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

NOTES
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50 WV (J)
(FS) = FAIL SAFE RESISTORS

FD-7/L MAIN AMP SCHEMATIC DIAGRAM

NO.10-5 830715A


FD-7/L
LINE AMP
DOLBY AMP & SW
REC AMP & EQ
PB AMP
IPLS AMP
REC/PB SW
LINE IN
LINE OUT
FLEXIBLE PCB 1/2
CMR01A0020
H901-1
H901-2
REC/PB COMB. HEAD
HD425804RVJ
TR1 2SC2320L(F,G)
TR2 2SC2603(G)
TR3,4 2SC2603(F,G)
D1 GMA-01
TR30 2SD1012V(F,G)
TR31 2SC1843(E,F)
TR32 2SC2320L(F,G)
TR33 2SC2320(E,F)
TR34,36,37 2SC2603(E,F)
TR9 2SD894
TR10 2SD1012V
TR11 to 17 2SC2320(E,F)
TR18 to 20 2SA1115(E,F)
TR22,23,28,29 2SC2603(E,F)
TR24 2SC2274K(E,F)
TR25,26 2SC2274K(E)
IC2 NE654
IC3 NE652
IC5 LA6458S
FL5 100S-431
BIAS TRAP
FL1 201AK-006
BIAS FILTER
T1 32-5009-12
VR4 NORMAL FREQ RESPONSE
METAL FREQ RESPONSE
CrO2 FREQ RESPONSE
VR1 20k REC LEVEL
VR5 50k PB LEVEL
L2 10mH
FLEXIBLE PCB 2/2
CMR01A0020
P2
P1
H902
HJ213270
ERASE HEAD
15 NORMAL
14 CrO2
13 METAL
12 +5V
11 OSC
10 REC MUTE
9 REC/P.B
8 P.B MUTE
7 B/C/OFF
6 NC
5 NC
4 IPLS
3 +14V
2 +20V
1 GND
TO CONTROL J6
+20V
+14V
OSC
PRE-AMP PCB T2051A501A(3ED)
2SC1843
2SC2274
2SC2320
2SC2320L
2SD1012V
2SA1115
2SC2603
2SD894
E C B
NO. 001348

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W(J)
ALL CAPACITORS IN μF 50 WV(J)
VOLTAGES ARE MEASURED AT STOP MODE. (W/OUT CASS TAPE)
VOLTAGES IN ( ) ARE AT REC PLAY MODE.
(USING A NORMAL TAPE)
▨ = B (POWER SUPPLY) LINE

VOLTAGE AT REC MODE

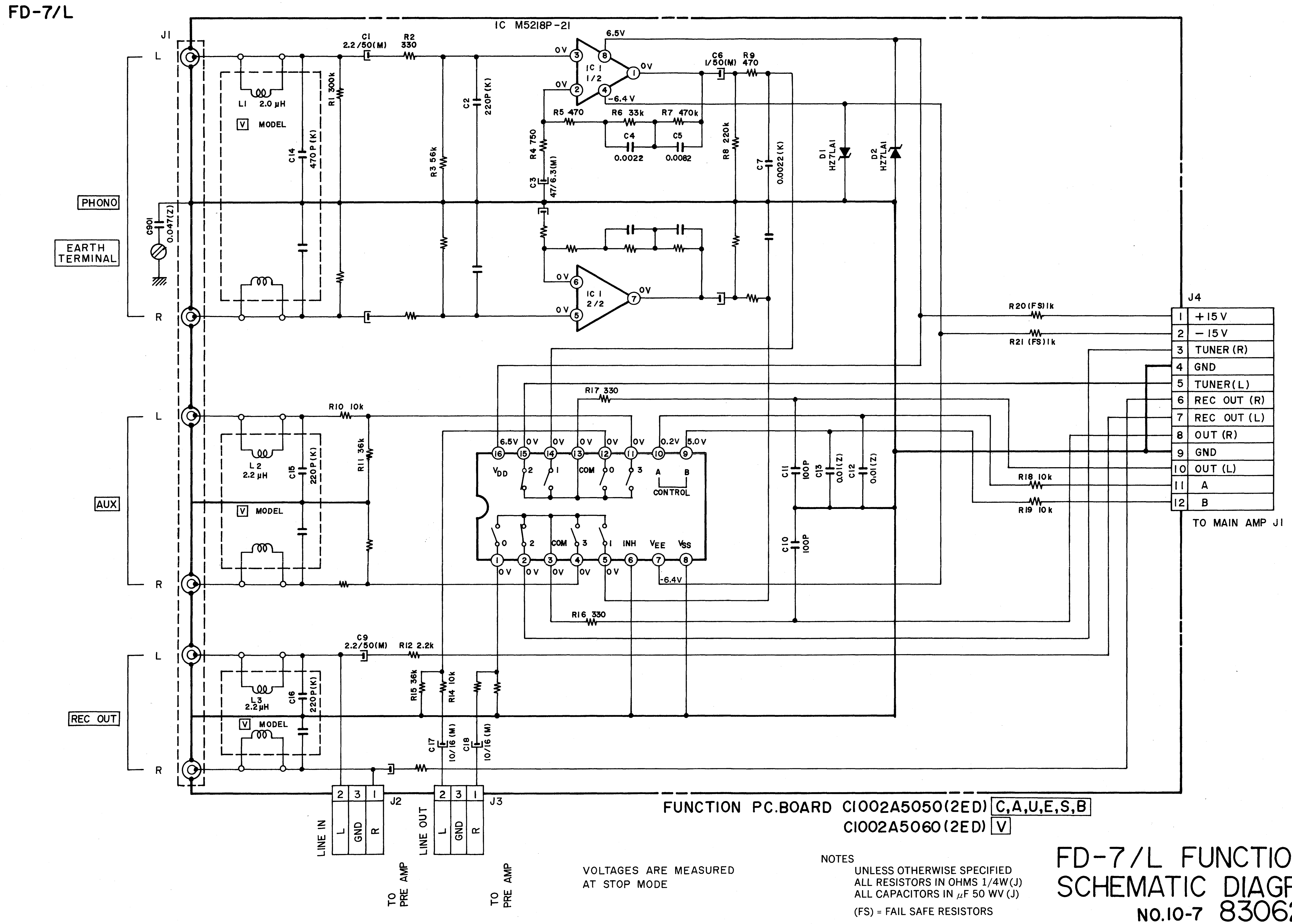
		NORMAL	CrO$_2$	METAL
TR22	B	3.6V	3.6V	3.6V
	C	9.1V	10.5V	17.1V
TR23	C	19.6V	19.6V	19.5V
TR24	C	19.6V	19.6V	19.5V
TR25, TR26	B	−0.1V	−0.3V	−1.1V
	C	8.1V	9.5V	16.1V
	E	0.2V	0.2V	0.3V

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

FD-7/L PRE AMP SCHEMATIC DIAGRAM

NO.10-6 83033IB


FD-7/L
J1
IC M5218P-21
C1 2.2/50(M)
R2 330
6.5V
0V
IC 1 1/2
-6.4V
C6 1/50(M)
R9 470
L1 2.0 μH
V MODEL
R1 300k
C2 220P(K)
C14 470P(K)
R3 56k
R4 750
C3 47/6.3(M)
R5 470
R6 33k
R7 470k
C4 0.0022
C5 0.0082
R8 220k
C7 0.0022(K)
D1 HZ7LA1
D2 HZ7LA1
PHONO
EARTH TERMINAL
G901 0.047(Z)
L
R
IC 1 2/2
0V
J4
R20(FS)1k
R21(FS)1k
1 +15V
2 −15V
3 TUNER(R)
4 GND
5 TUNER(L)
6 REC OUT (R)
7 REC OUT (L)
8 OUT (R)
9 GND
10 OUT (L)
11 A
12 B
TO MAIN AMP J1
R10 10k
R11 36k
R17 330
AUX
L2 2.2 μH
C15 220P(K)
V MODEL
6.5V
0.2V
5.0V
VDD
COM
A B
CONTROL
INH
VEE
VSS
-6.4V
C11 100P
C13 0.01(Z)
C12 0.01(Z)
C10 100P
R18 10k
R19 10k
R16 330
C9 2.2/50(M)
R12 2.2k
REC OUT
L3 2.2μH
C16 220P(K)
V MODEL
R15 36k
R14 10k
C17 10/16(M)
C18 10/16(M)
J2
J3
LINE IN
LINE OUT
L GND R
TO PRE AMP

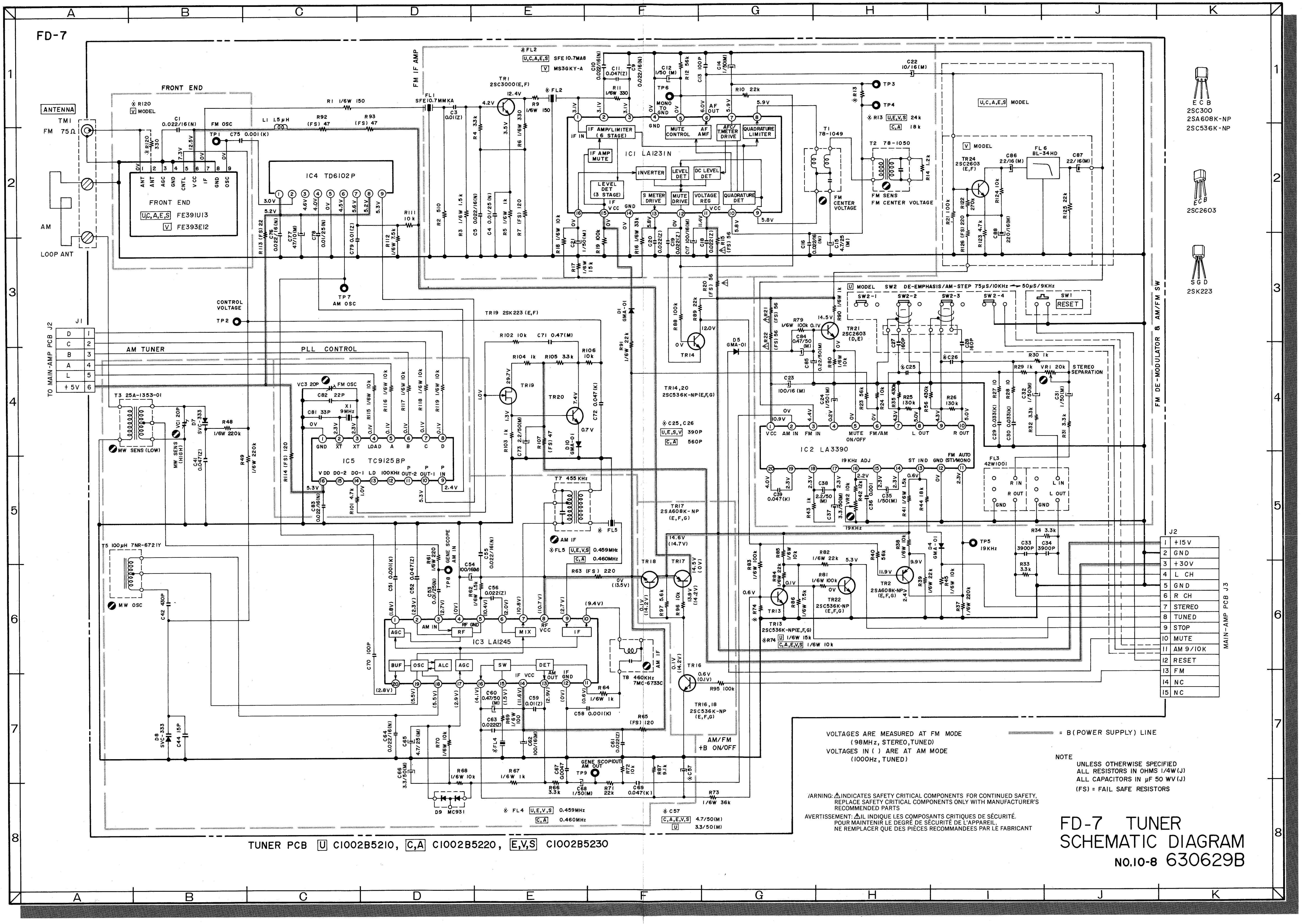
FUNCTION P.C.BOARD C1002A5050(2ED) C,A,U,E,S,B
C1002A5060(2ED) V

VOLTAGES ARE MEASURED
AT STOP MODE

NOTES
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50 WV(J)
(FS) = FAIL SAFE RESISTORS

FD-7/L FUNCTION SCHEMATIC DIAGRAM

NO.10-7 830628B


FD-7
FRONT END
ANTENNA
TM1
FM 75Ω
AM
LOOP ANT
※R120
V MODEL
FRONT END
U,C,A,E,S FE391U13
V FE393E12
IC4 TD6102P
FM IF AMP
※FL2
U,C,A,E,S SFE10.7MA8
V MS3GKY-A
TR1 2SC3000(E,F)
IC1 LA1231N
IF AMP/LIMITER (6 STAGE)
IF AMP MUTE
LEVEL DET (3 STAGE)
INVERTER
LEVEL DET
DC LEVEL DET
MUTE CONTROL
AF AMP
AFC/T.METER DRIVE
QUADRATURE LIMITER
S METER DRIVE
MUTE DRIVE
VOLTAGE REG
QUADRATURE DET
TP1
TP2
CONTROL VOLTAGE
TP3
TP4
TP5 19KHz
TP6 MONO TO GND
TP7 AM OSC
TP8 GENE SCOPE AM IN
TP9 GENE SCOPE(OUT) AM OUT
T1 78-1049
T2 78-1050
FM SENS
FM CENTER VOLTAGE
U,C,A,E,S MODEL
V MODEL
TR24 2SC2603 (E,F)
FL6 BL-34HD
TO MAIN-AMP PCB J2
J1
AM TUNER
PLL CONTROL
IC5 TC9125BP
VC3 20P FM OSC
X1 9MHz
TR19 2SK223(E,F)
TR20
TR14,20 2SC536K-NP(E,F,G)
TR14
※C25, C26
U,E,S,V 390P
C,A 560P
U MODEL SW2 DE-EMPHASIS/AM-STEP 75μS/10KHz → 50μS/9KHz
SW2-1 SW2-2 SW2-3 SW2-4
SW1 RESET
TR21 2SC2603 (D,E)
IC2 LA3390
STEREO SEPARATION
FL3 42W1001
FM DE-MODULATOR & AM/FM SW
T3 25A-1353-01
MW SENS (LOW)
MW SENS (HIGH)
T5 100μH 7NR-6721Y
MW OSC
T7 455KHz
AM IF
※FL5 U,E,V,S 0.459MHz
C,A 0.460MHz
IC3 LA1245
T8 460KHz 7MC-6733C
TR17 2SA608K-NP (E,F,G)
TR18
TR16
TR16,18 2SC536K-NP (E,F,G)
AM/FM +B ON/OFF
TR13 2SC536K-NP(E,F,G)
※R74 U 1/6W 15k
C,A,E,V,S 1/6W 10k
TR2 2SA608K-NP (E,F,G)
TR22 2SC536K-NP (E,F,G)
D9 MC931
※FL4 U,E,V,S 0.459MHz
C,A 0.460MHz
※C57 C,A,E,V,S 4.7/50(M)
U 3.3/50(M)
J2
1 +15V
2 GND
3 +30V
4 L CH
5 GND
6 R CH
7 STEREO
8 TUNED
9 STOP
10 MUTE
11 AM 9/10K
12 RESET
13 FM
14 NC
15 NC
MAIN-AMP PCB J3
E C B
2SC300
2SA608K-NP
2SC536K-NP
E C B
2SC2603
S G D
2SK223
TUNER PCB U C1002B5210, C,A C1002B5220, E,V,S C1002B5230

VOLTAGES ARE MEASURED AT FM MODE
(98MHz, STEREO, TUNED)
VOLTAGES IN ( ) ARE AT AM MODE
(1000Hz, TUNED)

▬ = B (POWER SUPPLY) LINE

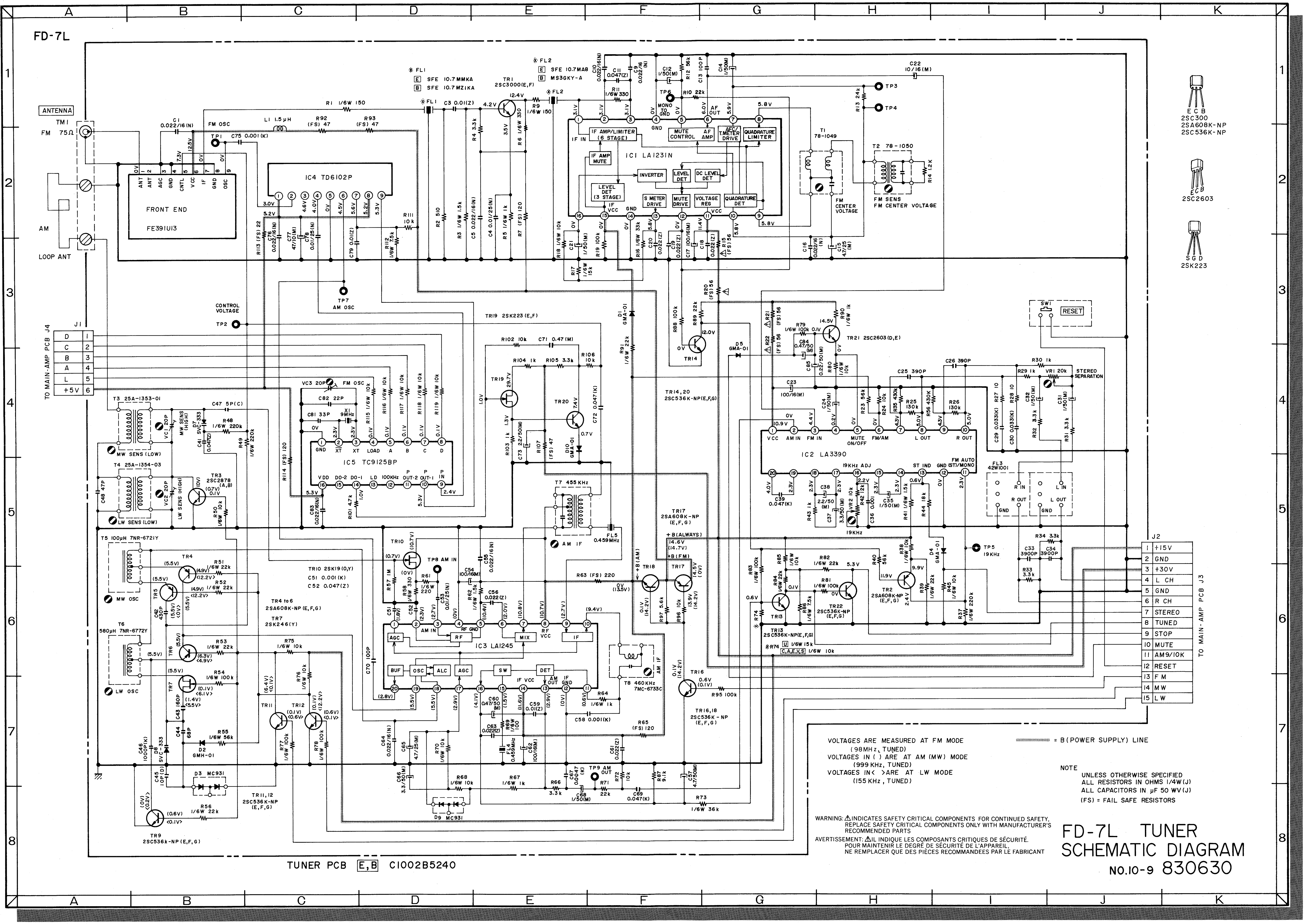
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W (J)
ALL CAPACITORS IN μF 50 WV (J)
(FS) = FAIL SAFE RESISTORS

/ARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

FD-7 TUNER
SCHEMATIC DIAGRAM

NO.10-8 630629B


FD-7L
ANTENNA
TM1
FM 75Ω
AM
LOOP ANT
FRONT END
FE391U13
IC4 TD6102P
IC1 LA1231N
IF AMP/LIMITER (6 STAGE)
IF AMP MUTE
MUTE CONTROL
AF AMP
AFC/T.METER DRIVE
QUADRATURE LIMITER
INVERTER
LEVEL DET
DC LEVEL DET
LEVEL DET (3 STAGE)
S METER DRIVE
MUTE DRIVE
VOLTAGE REG
QUADRATURE DET
*FL1 E SFE 10.7MMKA B SFE 10.7MZ1KA
*FL2 E SFE 10.7MA8 B MS3GKY-A
TR1 2SC3000(E,F)
T1 78-1049
T2 78-1050
FM CENTER VOLTAGE
FM SENS
TP1
TP2
TP3
TP4
TP5 19KHz
TP6 MONO TO GND
TP7 AM OSC
TP8 AM IN
TP9 AM OUT
CONTROL VOLTAGE
TO MAIN-AMP PCB J4
J1
D 1
C 2
B 3
A 4
L 5
+5V 6
T3 25A-1353-01
MW SENS (LOW)
T4 25A-1354-03
LW SENS (LOW)
TR3 2SC2878 (A,B)
IC5 TC9125BP
VC3 20P FM OSC
X1 9MHz
TR19 2SK223 (E,F)
TR20
TR14
TR21 2SC2603(D,E)
TR14,20 2SC536K-NP(E,F,G)
IC2 LA3390
19KHz ADJ
STEREO SEPARATION
SW1 RESET
FL3 42W1001
T5 100μH 7NR-6721Y
MW OSC
T6 580μH 7NR-6772Y
LW OSC
TR4 to 6 2SA608K-NP (E,F,G)
TR7 2SK246(Y)
TR10 2SK19(O,Y)
C51 0.001(K)
C52 0.047(Z)
IC3 LA1245
T7 455KHz
AM IF
FL5 0.459MHz
T8 460KHz 7MC-6733C
TR17 2SA608K-NP (E,F,G)
+B(ALWAYS)
+B(AM)
+B(FM)
TR16,18 2SC536K-NP (E,F,G)
TR13 2SC536K-NP(E,F,G)
TR2 2SA608K-NP (E,F,G)
TR22 2SC536K-NP (E,F,G)
TR11,12 2SC536K-NP (E,F,G)
TR9 2SC536K-NP (E,F,G)
D3 MC931
D9 MC931
J2
1 +15V
2 GND
3 +30V
4 L CH
5 GND
6 R CH
7 STEREO
8 TUNED
9 STOP
10 MUTE
11 AM9/10K
12 RESET
13 FM
14 MW
15 LW
TO MAIN-AMP PCB J3
E C B 2SC300 2SA608K-NP 2SC536K-NP
E C B 2SC2603
S G D 2SK223
TUNER PCB E,B C1002B5240

VOLTAGES ARE MEASURED AT FM MODE
(98MHz, TUNED)
VOLTAGES IN ( ) ARE AT AM (MW) MODE
(999 KHz, TUNED)
VOLTAGES IN< >ARE AT LW MODE
(155 KHz, TUNED)

▨ = B(POWER SUPPLY) LINE

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50 WV(J)
(FS) = FAIL SAFE RESISTORS

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

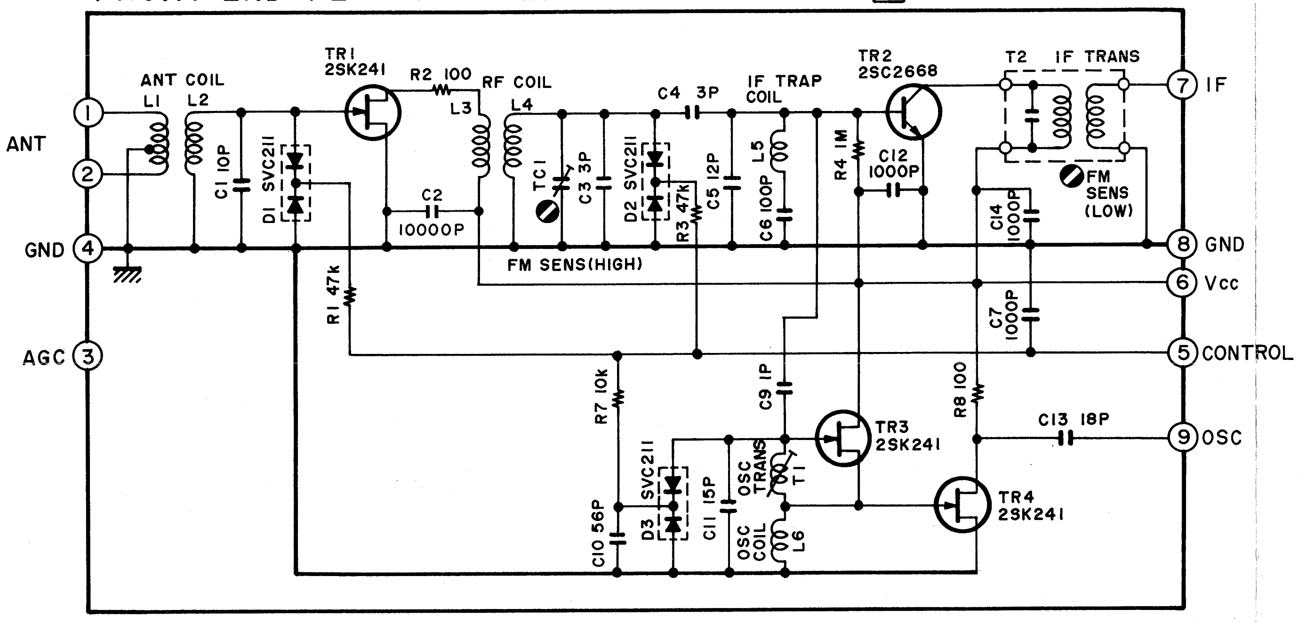
AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

FD-7L TUNER SCHEMATIC DIAGRAM

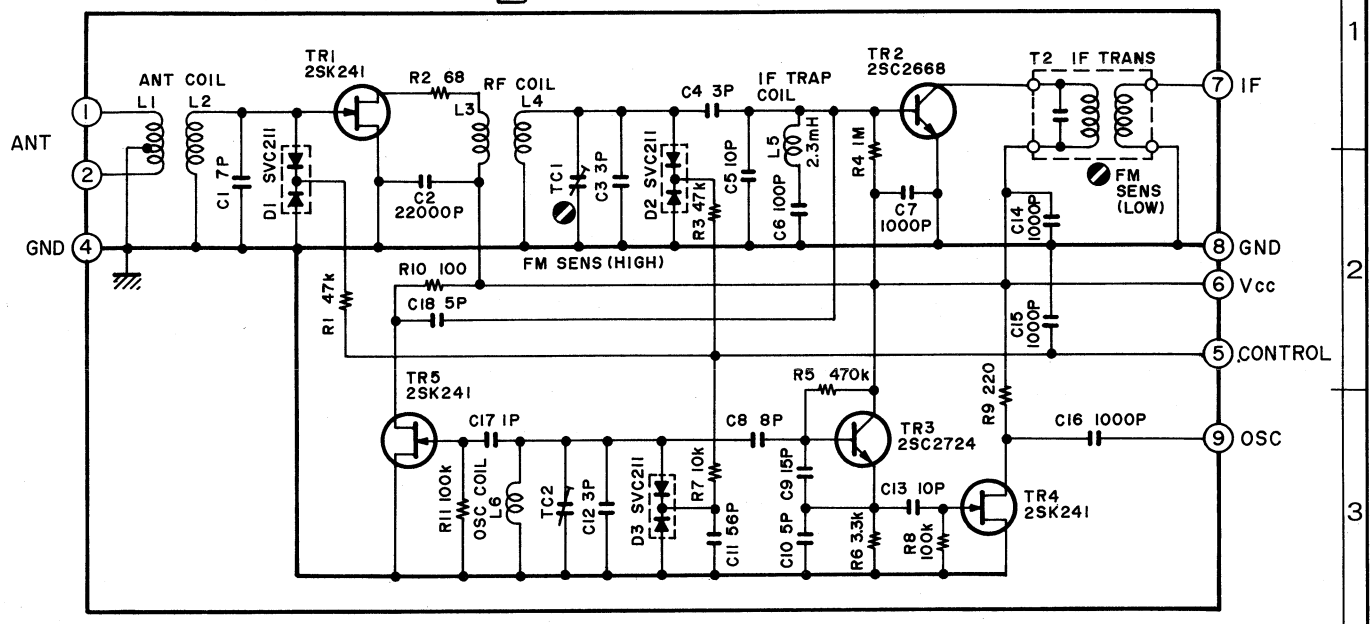
NO.10-9 830630

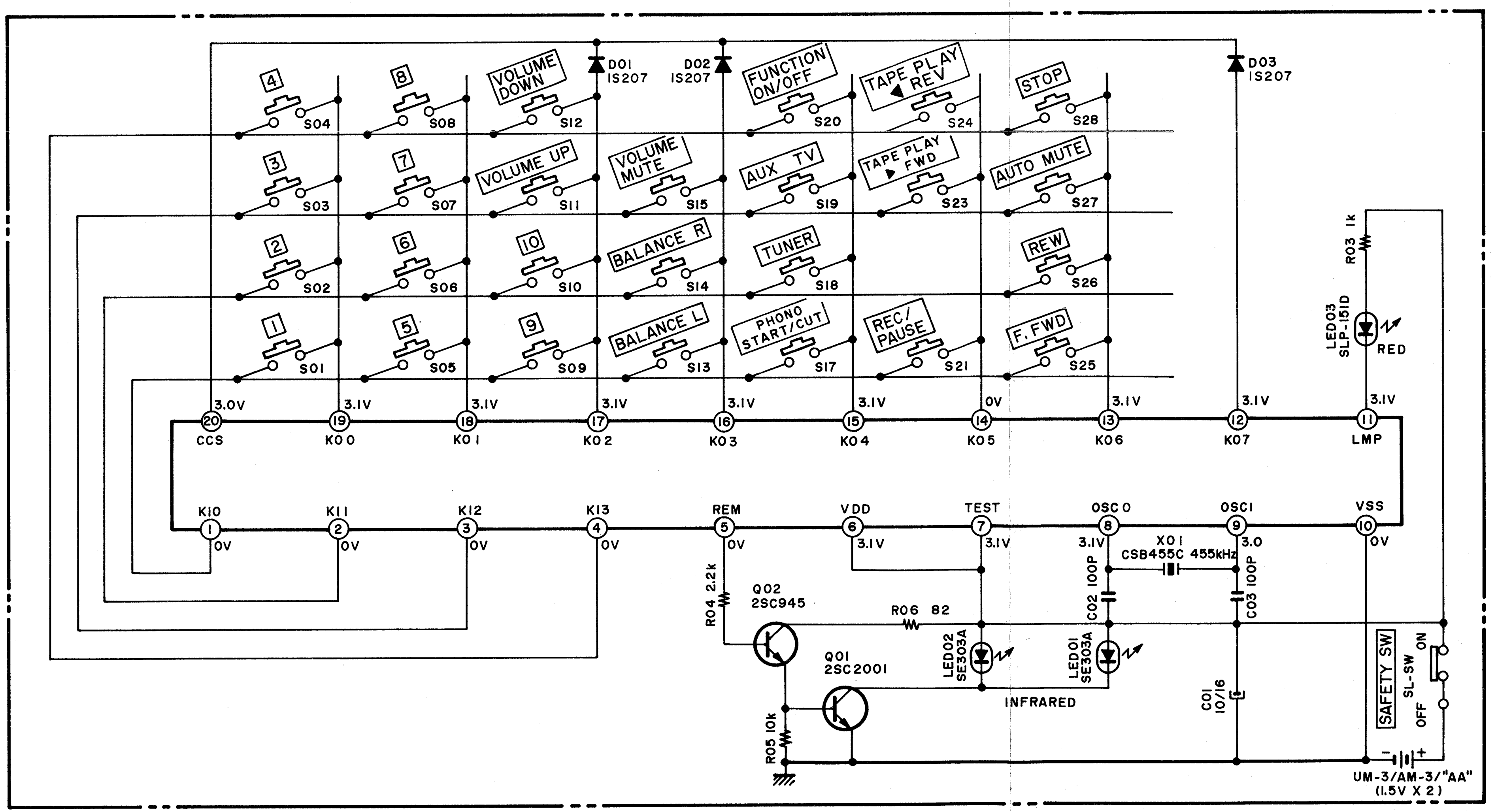
FD-7/L

FRONT END FE391U13 (ALL MODELS EXCEPT V MODEL)

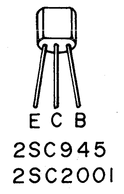

ANT
①
②
GND ④
AGC ③
ANT COIL
L1 L2
C1 10P
D1 SVC211
TR1 2SK241
R2 100
RF COIL
L3 L4
C2 10000P
TC1
C3 3P
C4 3P
D2 SVC211
R3 47k
C5 12P
IF TRAP COIL
L5
C6 100P
R4 1M
TR2 2SC2668
C12 1000P
T2 IF TRANS
FM SENS (LOW)
C14 1000P
FM SENS (HIGH)
R1 47k
R7 10k
C9 1P
TR3 2SK241
C7 1000P
R8 100
C13 18P
C10 56P
D3 SVC211
C11 15P
OSC TRANS T1
OSC COIL L6
TR4 2SK241
⑦ IF
⑧ GND
⑥ Vcc
⑤ CONTROL
⑨ OSC

FRONT END FE393E12 (V MODEL)


ANT
①
②
GND ④
ANT COIL
L1 L2
C1 7P
D1 SVC211
TR1 2SK241
R2 68
RF COIL
L3 L4
C2 22000P
TC1
C3 3P
C4 3P
D2 SVC211
R3 47k
C5 10P
IF TRAP COIL
L5 2.3mH
C6 100P
R4 1M
TR2 2SC2668
C7 1000P
T2 IF TRANS
FM SENS (LOW)
C14 1000P
FM SENS (HIGH)
R1 47k
R10 100
C18 5P
C15 1000P
TR5 2SK241
C17 1P
R11 100k
OSC COIL L6
TC2
C12 3P
D3 SVC211
R7 10k
C11 56P
C8 8P
R5 470k
TR3 2SC2724
C10 5P
C9 15P
R6 3.3k
C13 10P
R8 100k
R9 220
C16 1000P
TR4 2SK241
⑦ IF
⑧ GND
⑥ Vcc
⑤ CONTROL
⑨ OSC


4 S04
8 S08
VOLUME DOWN S12
D01 1S207
D02 1S207
FUNCTION ON/OFF S20
TAPE PLAY ◀ REV S24
STOP S28
D03 1S207
3 S03
7 S07
VOLUME UP S11
VOLUME MUTE S15
AUX TV S19
TAPE PLAY ▶ FWD S23
AUTO MUTE S27
2 S02
6 S06
10 S10
BALANCE R S14
TUNER S18
REW S26
1 S01
5 S05
9 S09
BALANCE L S13
PHONO START/CUT S17
REC/PAUSE S21
F. FWD S25
R03 1k
LED03 SLP-151D
RED
3.0V ⑳ CCS
3.1V ⑲ K00
3.1V ⑱ K01
3.1V ⑰ K02
3.1V ⑯ K03
3.1V ⑮ K04
0V ⑭ K05
3.1V ⑬ K06
3.1V ⑫ K07
3.1V ⑪ LMP
K10 ① 0V
K11 ② 0V
K12 ③ 0V
K13 ④ 0V
REM ⑤ 0V
VDD ⑥ 3.1V
TEST ⑦ 3.1V
OSC0 ⑧ 3.1V
OSC1 ⑨ 3.0
VSS ⑩ 0V
X01 CSB455C 455kHz
C02 100P
C03 100P
R04 2.2k
Q02 2SC945
R06 82
Q01 2SC2001
LED02 SE303A
LED01 SE303A
INFRARED
C01 10/16
SAFETY SW
SL-SW
ON
OFF
R05 10k
UM-3/AM-3/"AA" (1.5V X 2)

REMOTE CONTROL P.C B 12KH107A
(FD-7/L REMOTE CONTROL UNIT KHHFA032)

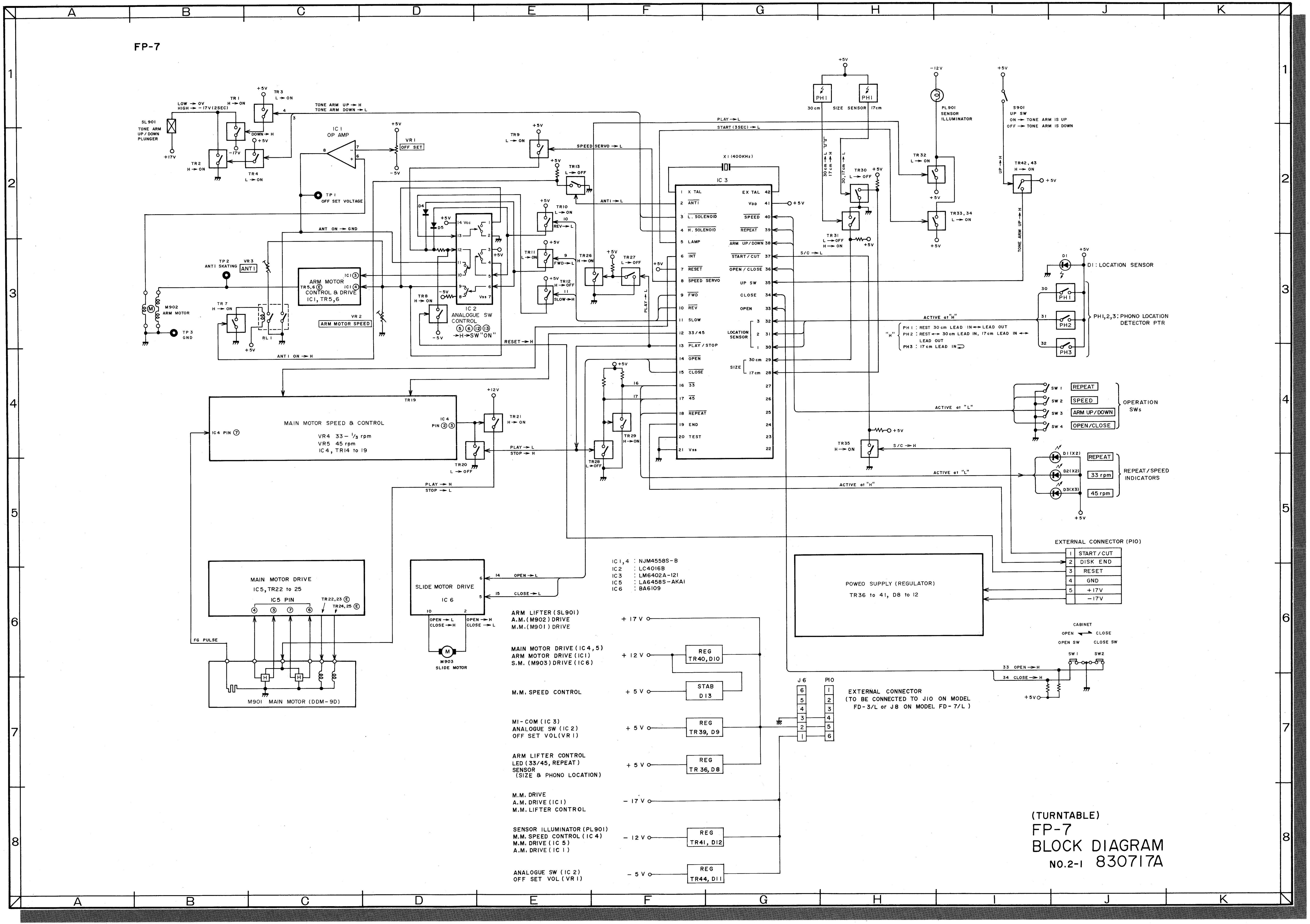


2SC945
2SC2001

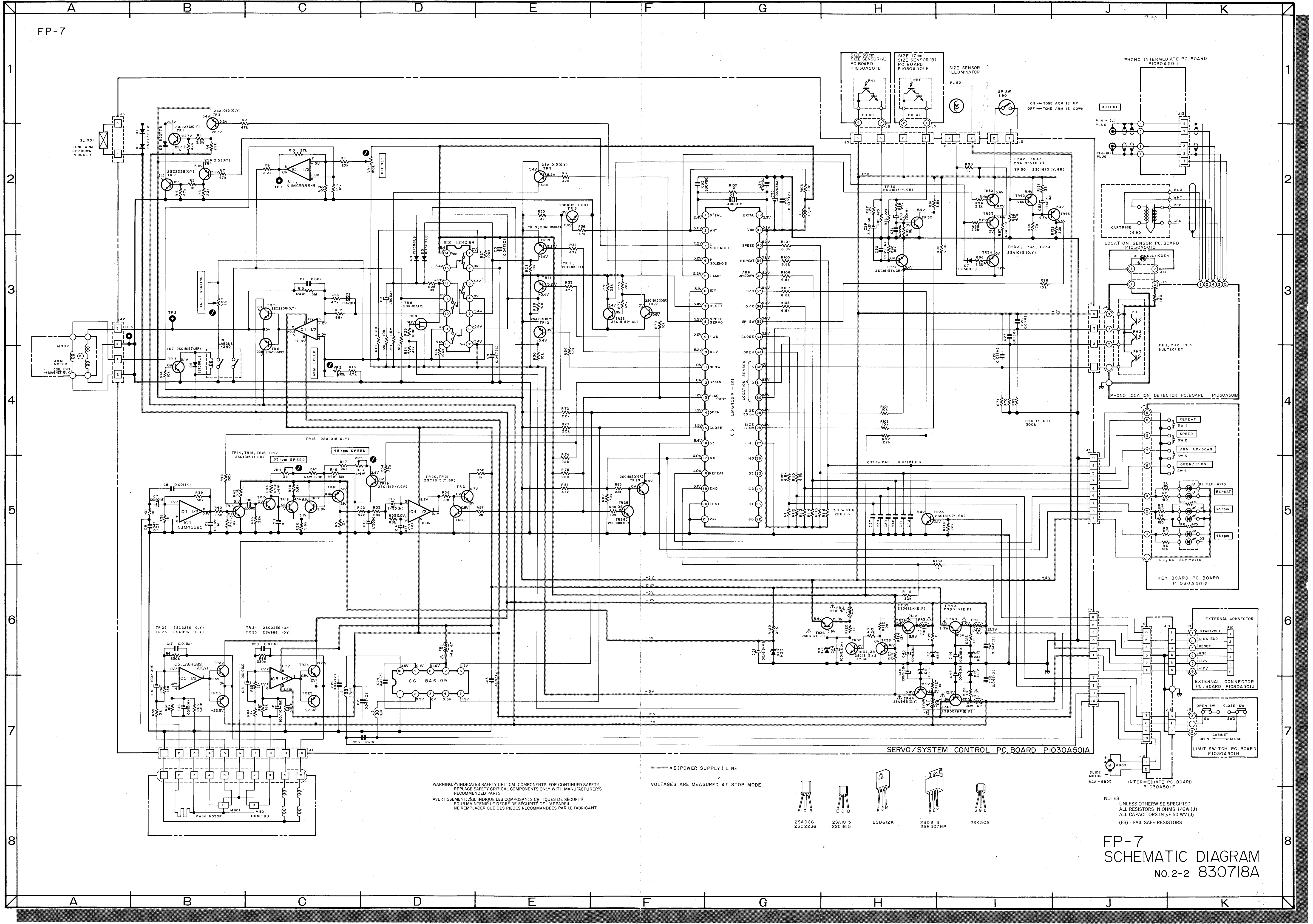
NOTES
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W (J)
ALL CAPACITORS IN μF 50 WV (J)

FD-7/L
FRONT END/REMOCON SCHEMATIC DIAGRAM

NO.10-10 830633B


FP-7
SL901 TONE ARM UP/DOWN PLUNGER
LOW → 0V
HIGH → -17V (2SEC)
TR1 H → ON
TR2 H → ON
TR3 L → ON
TR4 L → ON
TONE ARM UP → H
TONE ARM DOWN → L
IC1 OP AMP
VR1 OFF SET
TP1 OFF SET VOLTAGE
TP2 ANTI SKATING
VR3 ANTI
ANT ON → GND
ARM MOTOR CONTROL & DRIVE IC1, TR5,6
VR2 ARM MOTOR SPEED
M902 ARM MOTOR
TP3 GND
TR7 H → ON
RL1
ANTI ON → H
IC2 ANALOGUE SW CONTROL ⑤⑥⑫⑬ →H→SW"ON"
TR8 H → ON
TR9 L → ON
SPEED SERVO → L
TR13 L → OFF
ANTI → L
TR10 L → ON
TR11 L → ON
TR12 H → OFF
TR26 H → ON
TR27 L → OFF
RESET → H
PLAY → L
START (3SEC) → L
X1 (400KHz)
IC3
1 X TAL
2 ANTI
3 L. SOLENOID
4 H. SOLENOID
5 LAMP
6 INT
7 RESET
8 SPEED SERVO
9 FWD
10 REV
11 SLOW
12 33/45
13 PLAY/STOP
14 OPEN
15 CLOSE
16 33
17 45
18 REPEAT
19 END
20 TEST
21 Vss
42 EX TAL
41 VDD
40 SPEED
39 REPEAT
38 ARM UP/DOWN
37 START/CUT
36 OPEN/CLOSE
35 UP SW
34 CLOSE
33 OPEN
32 LOCATION SENSOR 3
31 2
30 1
29 SIZE 30cm
28 17cm
27
26
25
24
23
22
PH1 30cm SIZE SENSOR 17cm
TR30 L → OFF
TR31 L → OFF H → ON
S/C → L
PL901 SENSOR ILLUMINATOR
TR32 L → ON
TR33, 34 L → ON
S901 UP SW
ON → TONE ARM IS UP
OFF → TONE ARM IS DOWN
TR42, 43 H → ON
TONE ARM UP → H
D1 : LOCATION SENSOR
ACTIVE at "H"
PH1 : REST 30cm LEAD IN ←→ LEAD OUT
PH2 : REST ←→ 30cm LEAD IN, 17cm LEAD IN ←→ LEAD OUT
PH3 : 17cm LEAD IN
PH1,2,3: PHONO LOCATION DETECTOR PTR
SW1 REPEAT
SW2 SPEED
SW3 ARM UP/DOWN
SW4 OPEN/CLOSE
OPERATION SWs
ACTIVE at "L"
TR35 H → ON
S/C → H
D1(X2) REPEAT
D2(X2) 33 rpm
D3(X3) 45 rpm
REPEAT/SPEED INDICATORS
ACTIVE at "H"
MAIN MOTOR SPEED & CONTROL
VR4 33-1/3 rpm
VR5 45 rpm
IC4, TR14 to 19
IC4 PIN ⑦
IC4 PIN ②③
TR19
TR21 H → ON
TR20 L → OFF
PLAY → L
STOP → H
TR28 L → OFF
TR29 H → ON
PLAY → H
STOP → L
MAIN MOTOR DRIVE
IC5, TR22 to 25
IC5 PIN ④ ③ ⑦ ⑥
TR22,23 Ⓔ
TR24,25 Ⓔ
FG PULSE
M901 MAIN MOTOR (DDM-9D)
SLIDE MOTOR DRIVE IC6
OPEN → L
CLOSE → L
OPEN → L CLOSE → H
OPEN → H CLOSE → L
M903 SLIDE MOTOR
IC1,4 : NJM4558S-B
IC2 : LC4016B
IC3 : LM6402A-121
IC5 : LA6458S-AKAI
IC6 : BA6109
EXTERNAL CONNECTOR (P10)
1 START/CUT
2 DISK END
3 RESET
4 GND
5 +17V
-17V
POWEO SUPPLY (REGULATOR)
TR36 to 41, D8 to 12
CABINET
OPEN ← → CLOSE
OPEN SW CLOSE SW
SW1 SW2
33 OPEN → H
34 CLOSE → H
ARM LIFTER (SL901)
A.M. (M902) DRIVE
M.M. (M901) DRIVE
+17V
MAIN MOTOR DRIVE (IC4,5)
ARM MOTOR DRIVE (IC1)
S.M. (M903) DRIVE (IC6)
+12V
REG TR40, D10
M.M. SPEED CONTROL
+5V
STAB D13
MI-COM (IC3)
ANALOGUE SW (IC2)
OFF SET VOL (VR1)
+5V
REG TR39, D9
ARM LIFTER CONTROL
LED (33/45, REPEAT)
SENSOR (SIZE & PHONO LOCATION)
+5V
REG TR36, D8
M.M. DRIVE
A.M. DRIVE (IC1)
M.M. LIFTER CONTROL
-17V
SENSOR ILLUMINATOR (PL901)
M.M. SPEED CONTROL (IC4)
M.M. DRIVE (IC5)
A.M. DRIVE (IC1)
-12V
REG TR41, D12
ANALOGUE SW (IC2)
OFF SET VOL (VR1)
-5V
REG TR44, D11
J6 P10
EXTERNAL CONNECTOR (TO BE CONNECTED TO J10 ON MODEL FD-3/L or J8 ON MODEL FD-7/L)

(TURNTABLE)
FP-7
BLOCK DIAGRAM
NO.2-1 830717A


FP-7
A
B
C
D
E
F
G
H
I
J
K
SL 901
TONE ARM UP/DOWN PLUNGER
M902
ARM MOTOR
COIL UNIT (+MAGNET BLK)
TP1
TP2
TP3
IC1 NJM4558S-B
OFF SET
ANTI SKATING
ARM SPEED
IC2 LC4016B
TR8 2SK30A(R)
IC3 LM6402A-121
400KHz
X'TAL
ANTI
SOLENOID
LAMP
INT
RESET
SPEED SERVO
FWD
REV
SLOW
33/45
PLAY/STOP
OPEN
CLOSE
33
45
REPEAT
END
TEST
Vss
EXTAL
VDD
SPEED
ARM UP/DOWN
S/C
O/C
UP SW
OPEN
LOCATION SENSOR
SIZE 30 cm
SIZE 17 cm
HI
HO
G3
G2
G1
G0
33rpm SPEED
45rpm SPEED
IC4 NJM4558S
IC5 LA6458S-AKAI
IC6 BA6109
MAIN MOTOR
M901
DDM-90
SERVO/SYSTEM CONTROL PC.BOARD P1030A501A
SIZE 30cm SIZE SENSOR(A) PC.BOARD P1030A501D
SIZE 17cm SIZE SENSOR(B) PC.BOARD P1030A501E
SIZE SENSOR ILLUMINATOR
PL 901
UP SW S901
ON → TONE ARM IS UP
OFF → TONE ARM IS DOWN
PHONO INTERMEDIATE PC.BOARD P1030A501I
OUTPUT
PIN-(L) PLUG
PIN-(R) PLUG
BLU
WHT
RED
GRN
CARTRIGE
CG 901
LOCATION SENSOR PC.BOARD P1030A501C
D1 NJL1102EH
PH1, PH2, PH3 NJL7201EC
PHONO LOCATION DETECTOR PC.BOARD P1030A501B
REPEAT SW1
SPEED SW2
ARM UP/DOWN SW3
OPEN/CLOSE SW4
D1 SLP-471D
33rpm
45rpm
D2, D3 SLP-271D
KEY BOARD PC.BOARD P1030A501G
EXTERNAL CONNECTOR
START/CUT
DISK END
RESET
GND
+17V
-17V
EXTERNAL CONNECTOR PC.BOARD P1030A501J
OPEN SW
CLOSE SW
CABINET
OPEN ← → CLOSE
LIMIT SWITCH PC.BOARD P1030A501H
SLIDE MOTOR
M903
MCA-9805
INTERMEDIATE PC.BOARD P1030A501F
+5V
+12V
+17V
-5V
-12V
-17V
2SA966
2SC2236
2SA1015
2SC1815
2SD612K
2SD313
2SB507HP
2SK30A

= B(POWER SUPPLY) LINE

VOLTAGES ARE MEASURED AT STOP MODE

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY,
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL,
NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

NOTES
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W (J)
ALL CAPACITORS IN μF 50 WV (J)
(FS) = FAIL SAFE RESISTORS

FP-7
SCHEMATIC DIAGRAM
NO.2-2 830718A